JUNE 6, 1960

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The Methods and News Magazine for Industrial Buyers

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A CONOVER-MAST PUBLICATION

SEVENTY-FIVE CENTS

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Even heaviest blows can't bruise toes in Hood rubber Wurkshu

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workers in their jobs and give them greater protection.

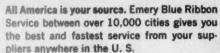
Shown above is the Hood rubber Wurkshu. The Hood line also includes several styles of boots made with neoprene for protection against acids, oils, fats, greases. For full information and a catalog, call your Hood distributor, or contact Hood Industrial Footwear, Department P, Watertown 72, Mass.

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PURCHASING

The Methods and News Magazine For Industrial Buyers

JUNE 6, 1960 VOLUME 48, No. 12

B. P. MAST Chairman of the Board B. P. MAST, JR.

RAY RICHARDS

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CONOVER-MAST PUBLICATIONS, INC EDITORIAL AND EXECUTIVE OFFICES 205 East 42nd Street, New York 17,

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THE REPORT

New MODEL 50 equips your lathes to do a lot more for a lot less!



Designed expressly for ATLAS, CLAUSING; DELTA, LOGAN, SHELDON, and SOUTH BEND LATHES

These and others of similar power and capacity now give top performance when equipped with the new Jacobs Model 50. Improve performance of your lathes. Increase spindle capacity as much as 42%. Get greater accuracy and stronger grip. It's easy and inexpensive with new Model 50 and its companion Rubber-Flex collets.

CONSIDER THESE FEATURES . . .

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Model 50 is made for heavy duty turning. It has tremendous gripping power.

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Model 50 is factory tested—maximum runout .001" T.I.R., at the nose when properly mounted.

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Always parallel Model 50 Rubber-Flex collet jaws permit chucking of tubing and fragile materials without crimping or scoring.

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The 10 Rubber-Flex collets in the 500 Series, developed especially for use with Model 50, cover a greater bar stock range than 63 old-fashioned steel collets. You can chuck any bar between 3/32" and 1-1/16" with this set of 10 collets.

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Model 50 eliminates capacity-wasting draw bar. You can increase spindle capacity up to 42%.

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Model 50 prices are revolutionary!

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The Jacobs Manufacturing Co., West Hartford 10, Conn.

Straws in the Trade Wind

- ▶ PIGGYBACK TRAFFIC UP—Even though overall freight traffic is running slightly behind last year, piggyback shipments have risen sharply. In the first 16 weeks of 1960 alone, 165,943 cars loaded with trailers were carried by the nation's railroads—a 42% increase over the similar period of 1959. At the same time, total carloadings fell 1% to 9,461,188 cars.
- ► CERAMICS AND METAL—A new experimental process combines ceramic fibers with metal for high strength uses. It is designed for applications where ultra-high temperature resistance is mandatory, says Horizons Incorporated, the developer.
- ➤ MATERIALS HANDLING ORDERS RISE—Volume of new orders for industrial material handling equipment is increasing. Latest bookings index of the Materials Handling Institute shows a five point rise to 133.60 (1954—100). This marks the third consecutive monthly advance in the index.
- EVERYONE'S BUYING GUIDE—Many P.A.'s use the yellow pages of their local telephone directory to help them buy. But few realize that there are more than 4000 such directories—one for each telephone company. Until recently, national advertisers had to con-

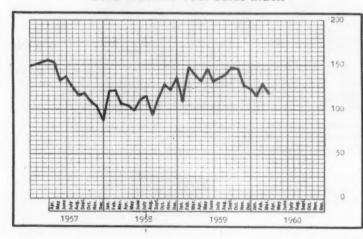
For the P.A.'s Hot File . . .

The short-term outlook for industrial commodities was presented at a recent Detroit Purchasing Agents Association meeting. Zinc—a steady market unless there's a terrific boom in business; Lead—the price may drop soon if present conditions don't change; Aluminum—a buyer's market in rod sheet and tube, with the price of sheet quoted from 8¢ to 12¢ off the book list; Steel—buyer's market to continue, with price increases (if they come) to show up first on selective extras.

tact each company separately to place ads. Now ads can be placed nationally with a single order. The expected increase in Bell System advertising that this will bring could make the yellow pages an even more useful buying guide.

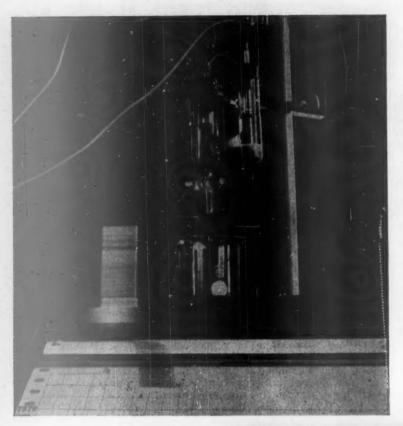
MACHINERY INDEX DROPS—With bookings for industrial supplies and machinery down, the latest new order index of the American Supply & Machinery Manufacturers' Association dropped a point to 199 (July 1948 — 100). The index has ranged between 202 and

Used Machine Tool Sales Index



Sales of used metalworking machine tools fell 8.9% according to the latest report of the Machinery Dealers National Association. The index, which now stands at 117.8 (1947-49 = 100), is 15% lower than it was in the same month last year.

ANALYTIC "BLOODHOUND" SNIFFS OUT SECRETS OF BEARING CORROSION



WE USE THIS HYPERSENSITIVE DEVICE TO TRACK DOWN ENGINE BEARING CORROSION TO

only a minute fragment of metal for accurate analysis. Consequently, engine bearing corrosion can be traced from its beginning through complete destruction of the bearing surface. Because test variables are minimized, Federal-Mogul engineers can accurately relate degree of corrosion to specific engine operating conditions. This analytical tool is in continual use in our laboratory, assisting research on many different projects. Prevention of corrosion and development of new bearing alloys are high on the list!

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depends on selecting the proper alloy for the operating conditions to be met. Federal-Mogul engineers have had years of experience with bearings and applications of all kinds . . . and this wealth of knowledge is available to bearings users. This is one reason why F-M sleeve bearings, precision thrust washers, formed bushings, and low-cost spacers are chosen for use in virtually everything from baby buggies to heavy industrial cranes.



There's much valuable data in our Design Guides on sleeve bearings, thrust washers and bushings; and in our brochure on spacers. For your copies, write Federal-Mogul Division, Federal-Mogul-Bower Bearings, Inc., 11077 Shoemaker, Detroit 13, Michigan.

FEDERAL-MOGUL



DIVISION OF FEDERAL-MOGUL-BOWER BEARINGS, INC.

Straws in the Trade Wind

198 since November 1959. It reflects new orders for production tools, equipment, and supplies placed by industrial distributors with manufacturers.

- ▶ LONG-TERM CONTRACTS—More state purchasing agents are signing long-term contracts for supplies and equipment. Reason: lower unit costs. Texas saves \$64 on each electric typewriter bought this way, says the National Institute Of Governmental Purchases. And Virginia reports annual savings of \$14,000 on volume drug purchases.
- ► FASTENER SHIPMENTS OFF The latest monthly seasonally-adjusted shipment index of the Industrial Fasteners Institute dropped eight points. This sensitive indicator of future industrial production now stands at 152 (1947-49=100).
- ► HANDLING THE ORDINARY—Companies spend 80% of their time and energy handling situations that are out of the ordinary and which occur only 20% of the time. So says Everett Drew, a Photostat Corporation execu-

tive. He urges more concentration on routine, rather than exceptional, activities—especially in record filing, storing, and retrieving.

- where the money goes—Federal, state and local taxes took \$1 of every \$4 earned by the majority of American families, according to a recent study by the Tax Foundation. Hidden and indirect taxes are included in this estimate. For most Americans, the foundation says, the total tax burden is distributed "in some reasonable relation to income."
- ▶ PRICING NEWS—Universal-Cyclops Steel Corporation cut base prices of vacuum-melted, high-strength, low-alloy steels by 13%; capacitor prices were reduced 25% by Aerovox Corporation; and medium transformer prices were lowered approximately 5% by General Electric Company.
- MAKING STEEL QUICKER A new method of making steel by open-hearth furnaces was announced by Ford Motor Co. Still experimental, this method is said to cut the required time in half.



Alvin Austin

QUOTE!

A national voluntary program to do away with compulsory retirement at 65 has been proposed by Alvin Austin, director of the Father's Day Council. "I appeal to society," Mr. Austin says, "to put an end to the often brutal practice of mandatory retirement at 65. Instead, let us make retirement optional at 65. Let us use the experience and know-how of our over-sixty executives and staff employees to train and prepare the upcoming younger employees who are to take their places." He notes that "compulsory retirement at 65 is archaic and unrealistic" because "most men of 65 today are as men of 55 a half century ago." And he urges business not to place "on the junk heap its greatest asset—the experience and ability of its most informed and competent co-workers."

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Translucent beauty of versatile new plastics made by Polyplastex United of Union, N. J. comes from a new kind of glass reinforcing material... made on a paper machine. Riegel supplies this new material, Glascel*, which Polyplastex impregnates with various resins. The result is Parglas* and Polylux*, two materials with unlimited design possibilities.*TM

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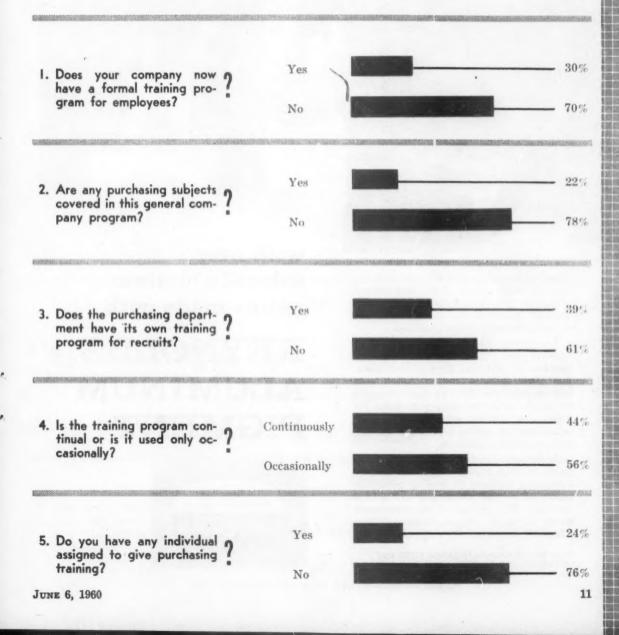
TECHNICAL PAPERS FOR INDUSTRY

For More Information Write No. 159 on Place Mark Card-Page 32

PURCHASING OPINION

Training In Purchasing

Many companies are turning to formal training programs to help both recruits and older employees cope with the complexities of modern business. But how much does purchasing, as an important area of management, participate in the general company program or conduct its own program? To find the answer to this question, we surveyed a representative group of purchasing executives. Their combined answers follow:





Good looks and good maintenance go on together with a coat of the new colored aluminum paints and roof coatings. Industrial buildings and installations can actually be decorated for protection.

Attractive colored aluminum paints provide heat reflectivity and insulation benefits. In addition, they protect metal and other surfaces from corrosion, rust and weathering. They're easy to apply by brush, roller or spray gun. Ideal for interior or exterior use, for roofing or equipment, for coding pipe or beautifying and protecting buildings.

Although Reynolds does not make paint, it does supply the finest quality aluminum pigment to leading manufacturers of colored aluminum paints and coatings. For names of manufacturers write Reynolds Metals Company, Box 2346-PP, Richmond 18, Virginia.

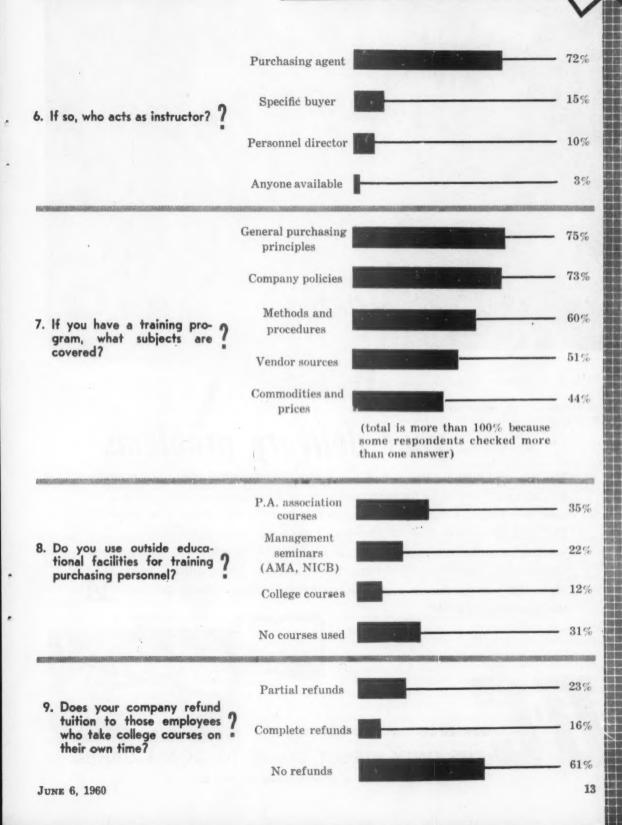
Watch Reynolds TV shows: "BOURBON STREET BEAT", "ADVENTURES IN PARADISE" and "ALL STAR GOLF" (resuming in October)—ABC-TV with new colored aluminum paints made with

REYNOLDS ALUMINUM PIGMENT



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Purchasing Opinion





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Special Industry Report:



1960 Construction To Set New Record

By Gerald L. Hoberman

Business Editor Construction Equipment Magazine

CONSTRUCTION volume this year will top last year's record \$54 billion. But it won't be by much—possibly only a 2 or 3% increase. Although this may not seem like much of an increase, it still represents a high level of activity because of the extremely heavy construction activity in '59. Compared with 1958's volume of \$48.9 billion, this year will show close to a '12% gain. This is three and a half times the average increase of the past few years, and almost twice that of the most optimistic predictions made a year ago.

The reason 1959 was such an outstanding year for construction was because the government used construction as an anti-recession tool in 1958. It made available billions of extra dollars in mortgages for construction work to pull the country out of its economic doldrums. Federal construction also increased substantially.

Impact Not Felt

Although this money was funneled into construction during 1958, its impact was not fully felt until the first half of 1959. By this time, the economy was well on the road to recovery, and business had fully regained its lost momentum.

Outlook for private construction this year is promising. There will be a sharp rise in this area which will offset the decline in public works construction.

For all types of construction the general leveling off trend is due mainly to:

- (1) Tightening of federal spending to head off inflation.
- (2) Shortages of mortgage money, especially during the first half, which slows down housing starts.

Industrial Spending High

Biggest construction gainer this year will be industrial building. Although the 1959 total for this work, both private and public, was only about \$2.3 billion, a strong upturn is already underway as business earmarks money for expansion and modernization. For the first third of the year alone, industrial construction rose 35% over the same period last year.

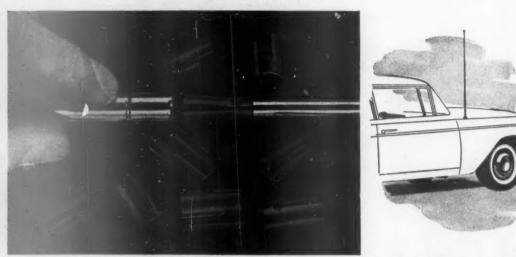
Many expansion plans scheduled for the final quarter of 1959 were temporarily shelved because of the steel strike. These plans have begun to slowly move into awards and should further increase during the second half of 1960.

Much of this building will take place along new major highways. The bulk of it will be on sites outlying metropolitan areas.

Commercial building awards will top 1959's record figure of \$3.9 billion. They should reach about \$4.5 billion this year. Privately financed office and warehouse building, roughly half the total, was in a mild slump last year. It seems that recovery is now well underway on a broad nationwide basis, with spending so far running 13% ahead of last year's comparable period.

CREATIVE COST CUTTING

Selecting the metal to fit the job can give you surprising savings in total cost



Small spring clips between telescoping parts of auto radio antennas must maintain electrical contact, hold parts firmly, give smooth sliding action. Brach Manufacturing Division of General Bronze Corp., Newark, N. J., found that spring clips of Duraflex®, Anaconda superfine-grain phosphor bronze, gave best positive electrical contact and improved smooth action in Brach Auto Antennas over original clips made of premium metals. The clips stand up in constant use, spot welding and fabrication are easier—and costs are about 25% lower.





In this G-E Automatic Coffee Maker control, a thermostat turns cam actuating switches—for high heat to brew coffee, for low heat to keep it warm. At first, upper switch element was an assembly of blade, bushing, and locking nut. Tinnerman Products Inc., Cleveland, Ohio, engineered a one-piece Speed Clip to replace it—by forming one thread in the blade and two prongs to lock the screw (see inset above). This simplification called for a superior phosphor bronze. Tinnerman found it in Duraflex, Anaconda superfine-grain phosphor bronze. It has higher tensile strength and endurance limit for long-lasting dependability—greater formability for economical manufacture. The result: unit costs were cut— and G-E assembles controls faster, more easily.

Quality control and cost reduction can go hand in hand. The secret is often simply matching the metal to the job. And Anaconda specialists, starting with 93 standard alloys, can offer an almost unlimited number of combinations of useful properties. For creative help in meeting your problems, write The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

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Purchasing Previews

Special Industry Report:

Shopping centers, restaurants, garages, etc., which make up the other half of th's field, should climb about 16% over last year's total of \$2.0 billion.

Although total housing starts will drop to about 1,250,000 this year, apartment house building will be up. Spending for multi-family housing (three or more units) will climb 23% to \$3.5 bill on, for 250,000 new units. This represents 10,000 more apartments than last year. Adding public apartment building to this figure should jack up the total to almost \$4 billion, an overall 16% rise.

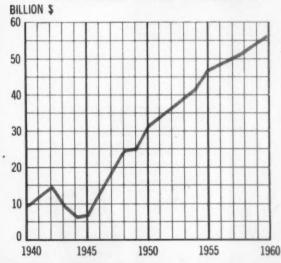
Housing Starts Will Drop

The trend toward more apartment houses also applies to row or attached one-family houses. These are becoming more popular, as builders begin to run out of suitable land, even in suburban areas.

Even though the number of one- and two-family housing units will probably drop to slightly over 1 million this year (about an 11% drop), spending will fall off no more than 6%. The reason: builders are constructing larger, higher quality, and more expensive houses to keep pace with increases in family income.

A great deal of military construction (as well as other public works) depends on the will of Congress—especially during an election year. About \$1.4 billion will be spent on military construction, with roughly one-third of that going for Air Force missile-launching bases.

TOTAL VOLUME OF NEW CONSTRUCTION



Construction spending this year is slated to be around \$55 billion, up about 2% or 3% from the 1959 figure.

Another area of government spending is in highways. In the next ten years, almost \$75 billion is expected to be spent in this area.

Throughout most of the years since 1945—with the exception of the Korean War period—highway spending has amounted to about a third of all government outlays. This proportion should increase in future years, as the Interstate Highway program goes into full swing.

Of the total \$75 billion figure, slightly more than \$40 billion will be spent by the federal government. The remainder will be accounted for by state, county, and city governments.

In the next decade, business will also spend large sums for new buildings. Its outlays for construction will amount to about \$150 billion. This will include construction by industrial and commercial companies, as well as that done by privately owned utilities.

Of course, there is a pronounced cycle in industrial building. Serviceability of existing buildings and the prospects of technological changes are only two of the factors that contribute to decisions about capital outlays.

One major industry hoping for large construction gains in the next decade is steel. For construction was the top user of steel and steel products last year—taking over 25% of all direct mill and service center shipments.

An area that may provide an impetus for construction spending is research and development. As more corporations spend increased amounts of money for R&D, additional laboratories and facility buildings will have to be constructed. This means more construction dollars being spent—with the possibility of still further expenditures if the products and processes developed in the R&D labs become commercially feasible.

Seek Bigger Wage Increases

In 1960, however, where contracts are coming up for negotiation, labor will be bargaining for fatter increases than in past years. Obviously, these are asking prices. But significantly, the asking price this year is well above those of past years.

There is no talk of a work stoppage. Unlike most other industries where both management and labor can build up a little fat, the weather is the controlling factor in construction. So, while there may be some hard bargaining, agreements are generally worked out without widespread strikes.

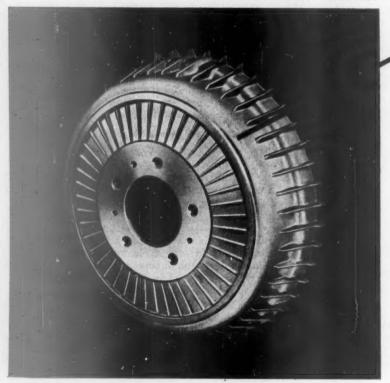
There are ample supplies of most materials needed for construction. Despite this, prices will inch up slightly during the remainder of the year, though in some cases the increases may be as much as 5%.

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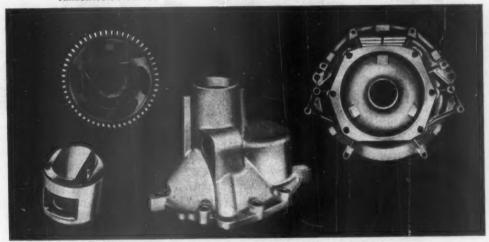
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Here's the economical answer to better quality control on fastening jobs that require different torques for the various nuts or cap screws. Now you can have a series of detachable bars, preset to the specific torques you require.

For example: slip on the 40 ft. lb. bar and run those three nuts—slip it off—put on the 50 ft. lb. bar and run the six cap screws—next the 30 ft. lb. bar, and so on. The Impactool shuts off automatically at each preset torque—quality control at its best.

How do you get it? Order a new Size 5040TD Impactool which has the built-in automatic shut-off device that is actuated by the preset torque control torsion bar. Then order as many torsion bars as you need. You can set the torque yourself with a vise and a wrench.

The Heavy-Duty bar is adjustable from 45 to 90 ft. lbs. The Light bar provides torques from 20 to 50 ft. lbs.

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36A-8

Washington Report

GNP to Hit \$510 Billion In 1960

IT IS generally forecast that the Gross National Product this year will reach close to a level of \$510 billion without any significant in-

crease in prices.

This would mean a 3% to 31/2% growth under conditions of real stability. Despite the adverse weather conditions during the first quarter of the year, the GNP reached a \$500.2 billion rate. The rate should continue to increase moderately up to the \$510 billion level by the end of the year.

No Runaway Inflation

Most analysts feel that there will not be any galloping in the economy this year. A better-thanaverage increase in growth seems assured, without the penalty of runaway prices.

The big question mark is what happens as wage increases pile up. The monthly reports issued by the Bureau of Labor Statistics continue to show higher wages in practically all segments of the

economy.

The purchasing agent, who is in a position of buying practically everything from basic materials to transportation and services, is aware that all of his sources are being hit by increased wage payments.

The winter settlements in steel were followed by wage increases in nonferrous metals. This then spilled over into such components as bearings.

Even where there is a general disposition by labor unions to be moderate in their demands, the final settlements add up to higher cost factors.

In metalworking, the steel and nonferrous patterns tended to spill over into other industries. One major bearing producer settled for a 7¢ general wage increase effective in December 1960, with a similar increase on October 1, 1961. There was also some improvement included in fringe benefits.

Another important bearing producer settled for a 10¢-an-hour increase four months ago, with a further increase on January 25,

It is apparent that the wage increase pattern will continue well into next year. However, the pressures for holding the line on prices are strong.

How can prices be held in line when the wage ingredient continues to increase? The only possible answer is an offsetting improvement in productivity.

Meetings between top level labor and management organizations have been initiated by President Eisenhower to promote industrial peace and boost factory output. But there is little precedent in our society for cooperation between labor and management for the purpose of reducing unit costs of production.

The closest cooperation developed during World War II. A whole series of government boards, committees, and programs were directed then toward keeping labor peace and stepping up industrial production.

The current program was instigated by the White House. The government plans to withdraw its influence, however, once the move gets underway. This effort is an outgrowth of the settlement of the steel strike, when it became clear that many issues which impeded a settlement were not subject to solution by teams of labor and management negot ators enmeshed in a deadlock.

Out of this development grew the conviction that some continuing contact between labor and management had to be created. Among the fundamental issues to be studied are a revision of plant work rules aimed at retarding the use of new equipment

and processes.



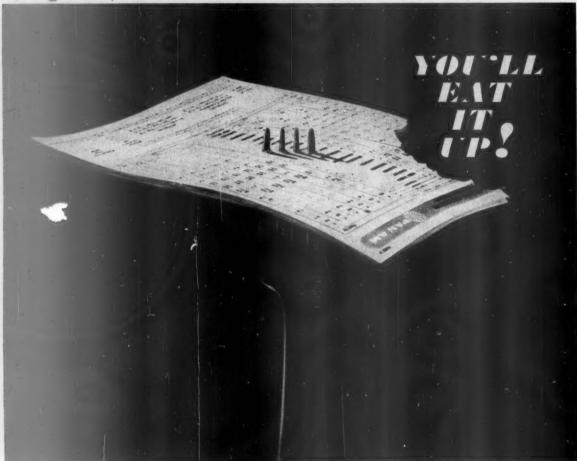
The whole program is alien to the postwar trend in labor-management relations. There hasn't been the degree of harmony in labor-management relations needed to accomplish such a broad purpose since World War II.

The only thing that seems to lend hope to such an effort at this time is the need to compete with foreign producers. Overseas manufacturers are competing successfully against us abroad and, to some extent, in our own mar-(Turn page)



Secretary of Commerce Frederick H. Mueller says the Gross National Product for the first quarter topped \$500 billion at a seasonallyadjusted annual rate.

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Washington Report

The real issue is whether labor and management can find common ground for action under the emergency of economic need, as they did during the period of war emergency.

Steel Producers Cite Dwindling Exports

Industry spokesmen and Department of Commerce officials continue to explore how our export volume can be increased. A series of meetings have been held which, at times, have turned into

gripe sessions.

Almost invariably, industry representatives point up the factors that not only make it difficult for them to sell abroad, but also make it possible for foreign producers to compete in our markets. For example, at a recent meeting with a group from the iron and steel industry, it was brought out that tariffs against U. S. steel were not an important trade barrier, although on some items a degree of discrimination was noted. The central problem in selling our steel abroad, the industry spokesmen said, is our higher costs of production-specifically traceable to our higher wage structure.

Selling Overseas

During these sessions, Joseph H. Myers, vice president for marketing of Acme Steel Company, gave a pointed analysis of his company's efforts to sell in foreign markets. Acme is an important producer of strapping. In 1947, it expected a high dollar value in strapping items, but this volume has since dwindled.

Myers' complaint is that his industry cannot compete because of higher wage costs. Here is the way he put his company's position in the export market:

"Hourly wage costs in Germany, for example, are less than half of our hourly wage cost; in Japan, a dollar a day, including fringes, is not uncommon in companies producing strapping. Re-

sulting from this lower labor cost in many foreign countries and the modern, up-to-date producing machinery, much of which has been provided by the United States since World War II, a well known condition has ensued. Substantially lower cost production in these other countries is limiting or preventing our participation in world markets.

Only Temporary Relief

"Previous technological advantages enjoyed in past years by the United States companies have disappeared, for equipment used in steel manufacture by foreign countries equals and in many cases exceeds the production efficiency of our own equipment. Further, restrictions on operation efficiency within our company brought about by powerful, unrestrained, coercive, nationwide labor unions, plus the growing tendency toward popularity of featherbedding in the minds of union leaders as evidenced in the recent 116-day strike in which this was the major issue, have brought about these conditions in the steel industry in the United States, and in Acme Steel Company in particular, which is putting us at a competitive disadvantage in comparison to world producers

"Tariffs imposed by the United States on this classification of products being brought into this country approximates 9%. This affords some protection to the United States producers. Although foreign producers can offer for sale in United States major cities steel strapping at \$20 to \$40 per ton less than Acme Steel Company's price, increasing this duty rate is not the ultimate answer, in my estimation, for that merely gives a temporary relief and in no way permits the solving of the basic problem.

"It is my conclusion that our problem is much deeper than tariffs and cannot be truly so! red for long periods of time, as far as our particular company is con-

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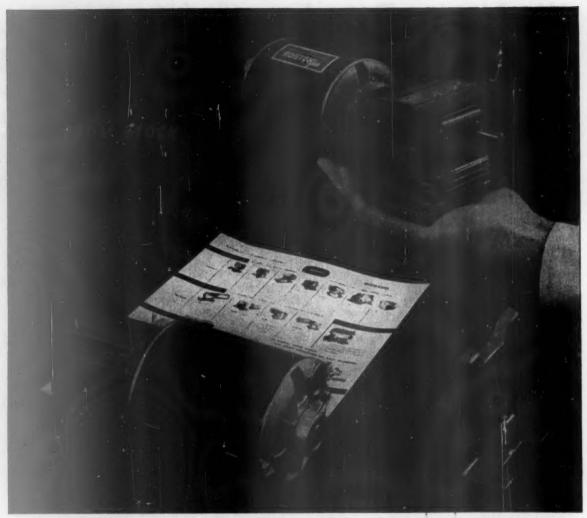


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Washington Report

cerned, through reduction of tariffs by importing countries. Only by substantial improvements in operating efficiency and realistic understanding of wage and production costs in this country will the markets again be open to us."

See No Large-Scale Steel Price Cutting

Government and industry economists are closely watching iron and steel price maneuvers. The price drop of some specialty steel alloys is generally written off as a result of squeezing out of development costs.

The drop in price of reinforcing bar in southern markets and cuts in prices by some warehouses, however, are being given closer scrutiny. These cuts are largely an effort to regain customers that have found imported iron and steel product attractively priced.

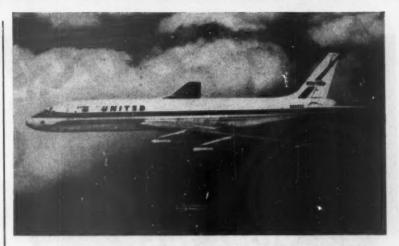
Government observers discount any possibility that widespread price cutting will take place in iron and steel. And they don't feel that what has happened in steel will spread over into other materials.

Offsetting Higher Costs

In the case of iron and steel—specifically in the instance of the mill that cut prices on reinforcing bar—observers here believe that there have been no technological developments to warrant price cuts. The steel industry will first have to offset the higher cost created by increased fringe benefits granted the steelworkers in the settlement of the record steel strike.

In addition, the first installment of the industrywide wage increase becomes effective December 1. When this occurs, the pressure on prices will be for an increase rather than for a reduction.

Thus such price reductions as occur seem to be only of a minor nature and of short duration. The cuts represent short-term efforts to regain customers lost to imports and are not the beginning of widespread price rivalry among U. S. producers.—A. N. Wecksler



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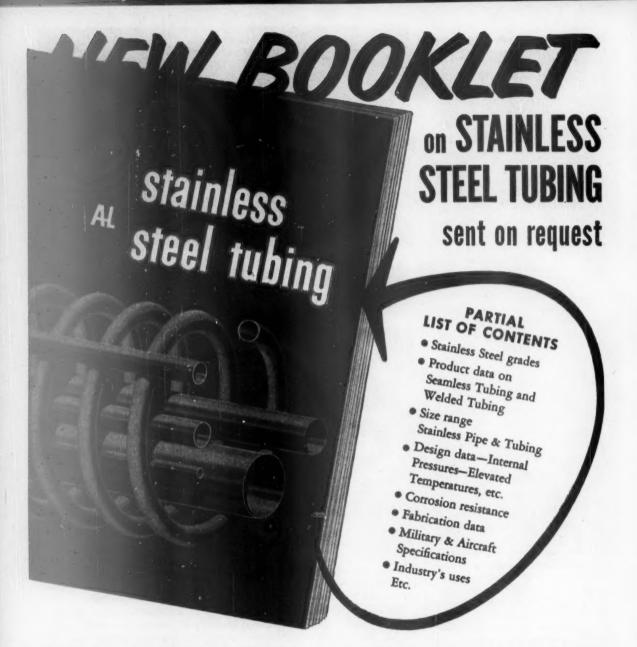
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Purchasing Follow-up

Industrial Markets Shifting Westward

A study of general market conditions for industrial products shows a growing bulge in production facilities on the West Coast—espec'ally the state of California.

This study and the accompanying map prepared by Russell T. Gray, Inc. indicates an increasing number of supply sources in the West that P.A.'s will have to consider in their future plans. California's industries have shown steady growth, with special emphasis on foods and transportation equipment.

Oddly enough, the largest growth was racked up by the state of Utah. Value added by manufacture there rose 71% since 1954 to \$473,514,000.

The smallest rise in value added occurred in the New England area —19.8%. This increase was the result of sizable growth that was notched in the electrical machine and transportation equipment industries.

But as in the past, the basic market for most industrial products is centered around the Midwest. The eight states of Wisconsin, Michigan, Illinois, Indiana, Ohio, New York, Pennsylvania, and New Jersey comprise the bulk of the industrial marketplace.

This area alone added more in value by manufacture than the rest of the country combined. The eight states added \$15,780,899,000, while the other states added \$15,-208,947,000.

The greatest rise in value added was in Pennsylvania, with Illinois a close second. Wisconsin and Indiana also had some good size increases.

Copper Industry Outlines Trade Problems

The foreign trade problems of the copper industry—which does an export business of over \$150 million annually—were outlined recently during a special meeting at the Department of Commerce.

Industry representatives met with department officials in a move designed to develop measures that the government might take to boost copper producer and fabricator sales to other

A spokesman for producers and refiners said that many countries apply higher tariffs to finished and semi-finished products than to raw copper. He noted that this is a barrier to U. S. exports and should be considered in the forthcoming General Agreement on Tariffs and Trade (GATT) negotiations.

Exporters Urge Waiver

Exporters of both copper and copper-base scrap urged a waiver of the requirement for individual export licensing of shipments to friendly nations. Such control is superfluous and burdensome, they said.

Some segments of the industry, including wire and cable producers, feel that they could broaden their markets in Latin America if more adequate government-backed export credit arrangements were available. And spokesmen for the fabricators of copper and brass said that their principle problem was the rising flood of imports.

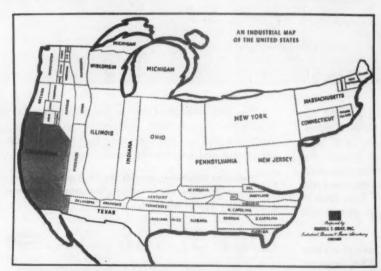
William A. White, Sr., Administrator of the Business and Defense Services Administration, asked the copper men to furnish examples of specific difficulties they have faced in sales or attempted sales abroad. The government is also seeking suggestions for specific measures that could be taken to assist the expansion of foreign sales of American goods.

Battle of Ideas To Grow in 1960's

American businessmen were warned that they must be ready and willing to compete in the battle of ideas during the next decade.

David H. Dawson, vice president of the DuPont Company, said that there would be no slackening of competitive activity in the market of world opinion.

"Our responsibilities as American citizens and businessmen do not cease when we have manufactured, sold, and delivered a certain quota of goods," he said. "It is up to us, each of us, to



Although the economic center of the United States is still around the Middle West, the industrial importance of the West Coast—especially California—is growing markedly.



Nicholson research and engineering pay off for you in this entirely new type of industrial hammer. It features a two-piece torque washer and stud. Here's how it works. At the point of impact, the torque washer rides freely up and down on the stud. The percussion of the hammer blow is absorbed and dissipated by this "floating action." This built-in shock-absorbing action reduces fatigue on the part of the worker.

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Purchasing Follow-up

maintain constant vigilance, to speak out clearly against the forces that would limit our nation's freedom."

Mr. Dawson suggested that the next ten years be termed the "Competitive Sixties." And he noted these four major areas where industry will be faced with stern competition:

(1) Manpower

(2) Between various engineering and construction materials

(3) Between suppliers of raw materials

(4) Products from abroad

To prepare for the tough, competitive years ahead, he advised industry to:

(A) Take the long view in selling and sell on the basis of performance and economics "with a minimum of emphasis on the gimmick and the gadget."

(B) Build "a sound financial structure, capable of adapting itself to the rapid technological changes which are probably com-

ing."

(C) Follow "enlightened and ethical personnel practices in view of the competition for the younger, more creative people whom you will need."

(D) Maintain technical and development efforts at a high level, not relying overly on suppliers to

carry the burden.

Businessmen Foresee 3rd Quarter Sales Rise

A rise in sales in the third quarter, compared with the similar period of 1959, was the consensus of a survey of businessmen's expectations made by Dun & Bradstreet.

Although a good majority of the 1555 executives questioned predicted better business, they were less optimistic than they were a year ago. Manufacturers of durable goods were most optimistic, while wholesalers were the least enthusiastic.

Sixty-seven percent of the participants expect higher sales than last year, while 5% anticipate declines. Last year at this time. sales increases were expected by 74% and declines by only 2%.

Most of these queried thought their gains would be in physical volume, since 79% foresaw no change in their selling prices. Retailers were most hopeful that they could hold prices at year-ago levels, while the largest percentage expecting increases was among the wholesalers.

Close to 65% said that they expect their inventory levels will remain the same as a year ago. The greatest proportion anticipating increases in their holdings was found among manufacturers of durable goods, while the largest percentage expecting lower stocks came among durables producers.

Vendors Urged to Cut Their Selling Costs

A call for suppliers to cut costs in their selling operations has been made by Newton T. Hess, vice president of Vorys Brothers, Inc., Columbus, Ohio.

Mr. Hess states that "to my way of thinking, the greatest service we can perform for any buyer of our products or services is for us to keep out these useless costs, keep our overhead down, and give our good customers the most possible value for the least amount of money."

Citing the ways in which salesmen can be of better service to purchasing agents, Mr. Hess says:

"We believe that the only way we can get customers is for our salesmen, instead of being order getters, to be business consultants, market consultants, product consultants for our customers. We are trying to do a creative selling job; we are trying to create new products uses, new applications; our salesmen are idea men and today I believe that we have made the switch we were trying to make. We have quit paying salesmen for not selling."

The vice president says that many salesmen violate the dignity of the P.A.'s with whom they deal. "Salesmanship has become a means, or a technique, for manip-



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SU 1-5967
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PURCHASING

Purchasing Follow-up

ulating people. We spend our time constantly trying to determine just what the reaction of a human being is to a situation so that we can take advantage of this situation in marketing our product.

"The result, I am sorry to say, is that today instead of selling groceries we are selling trading stamps; instead of selling automobiles we are selling the best deal in town. This seems to be the system of today, the American way of merchandising; of getting a man to give you an order."

Buyers appreciate salesmen who increase their own cost of selling while decreasing the cost of service, he says. And he adds that "we should be ready and willing to pay any amount necessary for selling if the sales made will show a profit."

Lead and Zinc Prices May Rise This Year

Lead and zinc prices may rise this year, says Charles R. Ince, vice president of St. Joseph Lead Co.

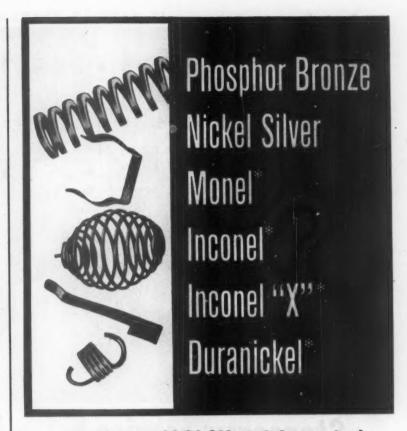
According to Mr. Ince, "prices for both lead and zinc should be firm throughout the year, with the possibility of some advance in the latter part of the year."

He also forecast a 5% increase in U. S. consumption of lead and a 10% gain in domestic use of zinc in 1960. This would boost lead consumption to 1,130,000 tons and zinc consumption to 1,032,000 tons, he added.

Liquidating Inventories

"These gains should permit further liquidation of our lead stocks, but will not offset our zinc position as our zinc stocks are already down to a minimum level," he observed.

He also said "We know now that some of these tonnages purchased went into consumers inventories. With the reappraisal of business conditions which took place the latter part of the first quarter, consumers started to liquidate inventories and April buying was below actual consumption."



...and now ISOLOY stainless steel spring wire—<u>all</u> from RIVERSIDE-ALLOY

Riverside-Alloy Metal is your *one* source of the world's finest, most uniform spring material . . . round or flat. And now, we add ISOLOY stainless steel!

Stainless is not a new material for Riverside-Alloy. But ISOLOY is a new trade name. The name ISOLOY was coined so that on specifications you can differentiate Riverside-Alloy stainless spring wire from wires made to conventional standards of uniformity. Regardless of test or comparison, ISOLOY exhibits uniform temper, dimensional size, grain size, tensile strength and coating.

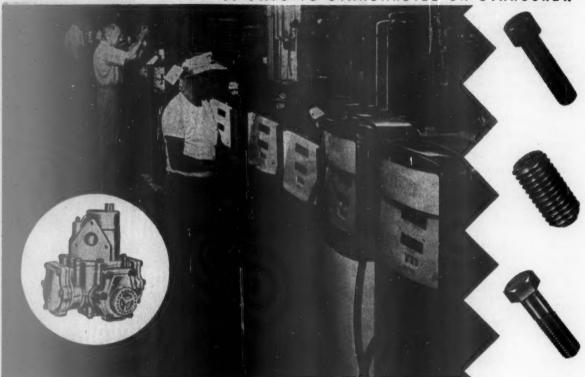
Check it now. For complete information, prices and delivery of ISOLOY or other spring materials and a copy of the new "Spring Materials Digest," write: Riverside-Alloy Metal Division, H. K. Porter Company, Inc., Riverside, N.J.

*Trademark of the International Nickel Co., Inc.



PORTER SERVES INDUSTRY with steel, rubber and friction products, asbestos textiles, high voltage electrical equipment, electrical wire and cable, wiring systems, motors, fans, blowers, specialty alloys, paints, refractories, tools, forgings and pipe fittings, roll formings and stampings, wire repe and strand.

For More Information Write No. 173 on Place Mark Card-Page 32



Stanscrew service helps insure precision of Cilbarco pumps

Gilbert & Barker Mfg. Company builds its famous Gilbarco gasoline pumps for oil companies large and small, and ships them to every state in the union as well as to most countries overseas. To insure precision and dependability of these pumps, great care must be taken in all assembly operations. Fasteners, for instance, must be torqued precisely to keep all components in perfect alignment.

Because of the critical importance of fasteners to its products, Gilbarco has selected Stanscrew heat-treated cap screws for such key applications as the positive displacement meter (shown in the insert). Stanscrew fastener specialists were happy to assist Gilbarco engineers in determining the right fastener with the correct torque to assure trouble-free service.

Gilbert & Barker is one of a long roster of honored names in American industry who have found it pays to standardize on Stanscrew. A product of unsurpassed quality . . . a broad selection of more than 5,500 different fasteners . . . prompt service through local distributors, backed by complete stocks at three conveniently located plants . . . these are a few of the reasons Stanscrew means greater value in fasteners.

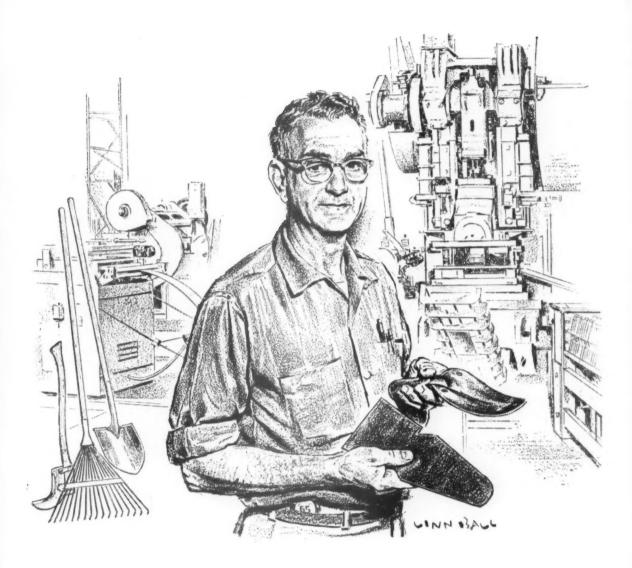
Stanscrew's experienced fastener specialists can often suggest ways to improve your assembly pro-cedures. Your local Stanscrew distributor will be happy to arrange a prompt visit. Call him today.



CHICAGO | THE CHICAGO SCREW COMPANY, BELLWOOD, ILLINOIS HMS | HARTFORD MACHINE SCREW COMPANY, HARTFORD, CONNECTICUT WESTERM | THE WESTERN AUTOMATIC MACHINE SCREW COMPANY, ELYRIA, OHIO

STANDARD SCREW COMPANY 2701 Washington Boulevard, Bellwood, Illinois

For Mare Information Write No. 174 on Place Mark Card-Page 32



"All Things Considered, You Can't Beat Sharon Steels and Service" - DAVID H. PARKER, Assistant Foreman Sheet Metal Saybrook Plant, True Temper Corporation

"At True Temper we make hundreds of different items for gardeners, craftsmen and sportsmen," says David H. Parker, assistant foreman, sheet metal. "Because of this we buy many different steelsfrom plain hot rolled carbon to special analysis stainless. We buy from several different steel producers, so I speak from experience when I say some of the finest quality steel I have used in my 20 years in the metalworking business has come from the Sharon Steel Corporation, Sharon, Pa."



EVOLUTION OF



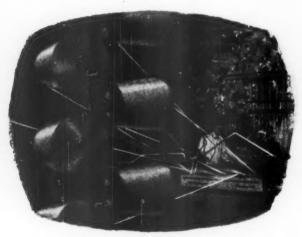
IT ALL STARTED when Leonardo da Vinci invented the belt drive for his polishing wheel. Spurred on by the drive's many advantages, engineers have striven for a more effective method of indirect power transmission ever since.



THE NEXT MAJOR DEVELOPMENT, although then seemingly unrelated, was the discovery of the vulcanization of rubber in 1839. Charles Goodyear not only fathered a multibillion-dollar industry, but also helped pave the way to much more efficient power transmission.



ANOTHER MAJOR BREAKTHROUGH came in 1941, when Goodyear introduced the <u>first practical</u> Steel Cable V-Belt for use on Army tanks. Here was the strongest, most efficient, most heat- and stretch-resistant belt ever built. A wartime success, steel cable is used in belts handling today's toughest industrial drives.



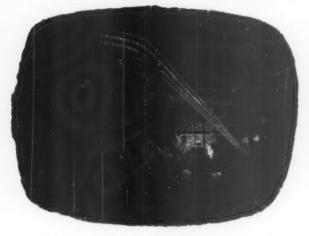
THEN CAME THE "MIRACLE" FIBERS and super-rated V-belts. Again Goodyear was in the fore with the HY-TV-Belt—a strong, shock-resistant belt that answered most multiple drive problems. But V-belt makers still sought a more effective way to overcome stretch and shrinkage.

For maximum, trouble-free horsepower hours on any V-belt drive, insist on the top belt from the top beltmaker.

THE BIG NAME IN V-BELTS:



A REVOLUTION



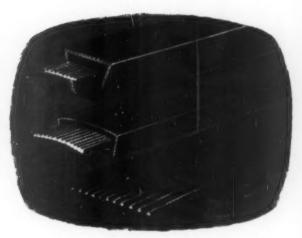
OVER A DECADE PASSED BEFORE a man named Combe introduced two new ideas in the transmission of power-teams of load-carriers and "wedge-in" action. His first multiple rope drive was not very efficient or durable, but started a whole new trend in development.



IT TOOK A LITTLE TIME before the first rubberized V-belts were introduced. Many of the earliest improvements were developed by Goodyear scientists. The greater efficiency of the V-belt soon placed it on many drives, despite shortcomings in length stability and strength.



GOODYEAR SOLVED THE PROBLEM with the 3-T Process to take surplus shrinkage and stretch out of synthetic cord. That development made possible multiple drive V-belts with true dimensional stability—Green Seal V-Belts by Goodyear that stayed matched on the drive or in storage.

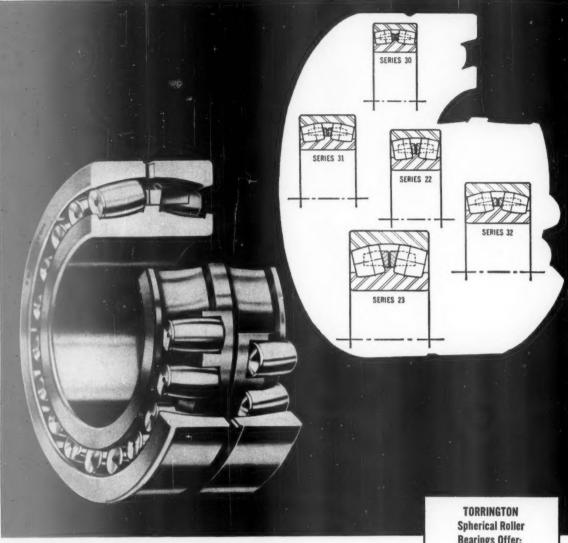


A REVOLUTION IN POWER TRANSMIS—SION was launched by the complete line of V-belts with the Green Seal—Compass-V-Steel, HY-T, E-C Cord, and the compact new HY-T WEDGE. With P.D. (positive drive) and Variable-Speed Belts, they combine to offer Goodyear belts of unsurpassed quality for every need.

See your Goodyear Distributor or write: Goodyear, Industrial Products Division, Lincoln 2, Nebraska, or Akron 16, Ohio.



THE GREATEST NAME IN RUBBER



There's a Torrington Spherical Roller Bearing for your application

Bearings matched exactly to the job pay off in better performance, longer life, greater reliability. That's why it pays to specify carefully. And that's why it pays to choose Torrington Spherical Roller Bearings.

Whatever your space limitations or capacity requirements, the five series of Torrington Spherical Roller Bearings provide the right bearing for virtually every industrial application. You can design for straight bore or tapered bore with adapter. You can benefit from extra features such as lubrication groove and oil holes, or selected outside diameters.

Your use of Torrington Spherical Roller Bearings will assure exceptional operation and longer bearing life under the toughest conditions. They're made to Torrington's own uncompromising standards-the highest in the field of anti-friction engineering-by the manufacturer of every basic type of anti-friction bearing.

Bearings Offer:

- conformity of rollers to raceways
- Integral center guide flange for stability
- positive roller guidance
- · land-riding bronze cages
- maximum radial and thrust capacity
- controlled internal clearance
- electronically selected rollers
- · inherent self-alignment · even load distribution
- long, dependable service life

Send for new Torrington Spherical Roller Bearing Catalog #258

progress through precision

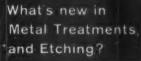
TORRINGTON BEARINGS

TORRINGTON COMPANY South Bend 21, Indiana . Torrington, Conn.

For More Information Write No. 177 on Place Mark Card-Page 32

For More Information about ad on facing page Write No. 178 on Place Mark Card—pg. 32→ Write No. 178 on Place Mark PURCHASING

ducts and services can yo



Quite a few things. For example, there's the use of Becco Ammonium Persulfate in etching printed circuits. Seems the ma-terial works a lot better - at less cost - and with none of the hazards of the ferric chloride solutions conventionally used.

Then, there's the problem of

pickling copper and brass. Lots of pickling agents will do this - only trouble is, you've got to paint or plate or do whatever you're going to do with the metal rather quickly. Or else. Or else it will tarnish or oxidize and you're in the pickie all over again.

Not so with Ammonium Persulfate. Cleans fine. Puts a mild etch on the surface, too, for better paint or plating bonding. More important, perhaps, is the fact that the metal resists retarnishing for up to two weeks. Ideas?

We hope so. What's more, we've got several booklets to help spur you on. They're free-use the coupon below to order

- No. 39 and 51-Surface Treatment of Metals with Peroxygen Compounds.
- No. 86 Improving Properties of Copper and Brass Surfaces.
- No. 97 Paddle Etching of Printed Circuits with Ammonium Persulfaté.
- No. 99 Tank Immersion Etching of Printed Circuits with Ammonium Persulfate.
- No. 102-Etching of Printed Circuits with Mercury Activated Persulfate.



What's a PEROXYGEN?

Fact is, "peroxygen" is a word that Becco uses to indicate that we can tie oxygen onto just about anything.

How come? Well, years of experience in producing Hydrogen Peroxide has produced an affinity between Becco and oxygen - an affinity we have capitalized on to give you compounds that will provide a ready source of oxygen - wherever, however and whenever you need it.

We have a good number of such compounds on the shelves. Ouite a few others are in development. Still others are merely in our minds, but we can begin drawing them out if you're interested.

We hope you are interested. But we'll never know-unless you fill in the coupon below and mail it to us. Why not?



Becco's Four-Fold Engineering Service Program - offered free -includes:

- 1. Comprehensive survey of your facilities.
- 2. Specific proposal with recommendation of proved equipment and where it is obtainable.
- 3. Installation supervision by Becco.
- 4. Periodic inspection and permanent service.

Can you use this free Becco help, based on more years of experience with bulk handling of H₂O₂ than any other manufacturer? Use the coupon to let us know.

BECCO E



BECCO CHEMICAL DIVISION, FMC Station B, Buffale, New York

Dept. PM-E Gentiemen. Please send me the following free bulletins: 39 and 51 □ 86 ☐ 97 □ 102 □ 99 MAME FIRM.

STATE

CITY.

BECCO



BECCO CHEMICAL DIVISION. FMC Station B, Buffalo, New York

Dept. PM-D

Centiemen:

Send me more information about Becco Peroxygen Chemicals.

MARKE FIRM

ADDRESS CITY

STATE ZONES

BECCO fmc xx



BECCO CHEMICAL DIVISION, FMC Station B, Buffale, New York

Dept. PM-B

Please tell me more about your Four-Fold Engineering Service

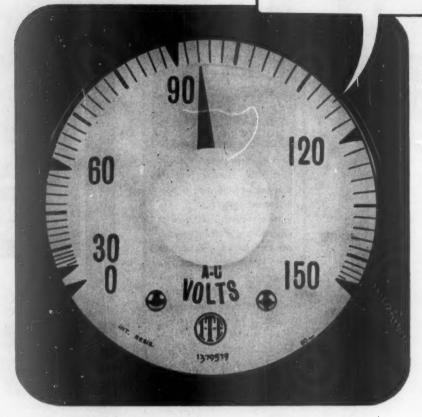
NAME.

FIRM

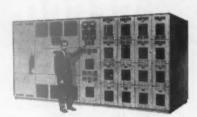
ADDRESS

_STATE ZONE





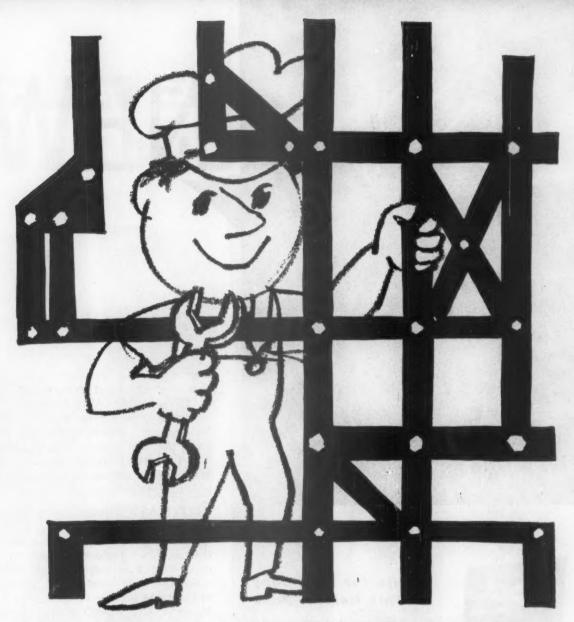
"But I was positive we didn't need another substation!"



MORAL: For good voltage regulation and better operating efficiency, put a secondary unit substation in each load area. And for complete information on today's most value-packed line of substations, write for Bulletin 3104-1A, I-T-E Circuit Breaker Company, Dept. SW, 1900 Hamilton Street, Philadelphia 30, Pa.



I-T-E CIRCUIT BREAKER COMPANY



"I Like Bethlehem bolts so much I built this just for fun!"

You'll like Bethlehem bolts, too. They're tops in quality. All sizes and types of carriage, lag, and machine bolts and nuts are available for quick delivery.





BETHLEHBM STEEL COMPANY, BETHLEHBM, PA. Export Distributor: Bothlehom Steel Export Corporation

BETHLEHEM STEEL



For More Information Write No. 180 on Place Mark Card-Page 32

JUNE 6, 1960

For More Information about ad on following page Write No. 181 on Place Mark Card—pg. 32->

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Write for Your Copy of This Helpful Book

This 64-page illustrated book gives complete information on all types of CLEVELAND Milling Cutters—Plain, Side, Half Side, Corner Rounding, Concave, Convex, Woodruff Key Seat, Angle, Metal Slitting, Screw Slotting. Also full information on CLEVELAND End Mills. Ask for your copy.

Over a period of years we have continually enlarged and improved our line of CLEVELAND End Mills. Now, with the addition of the wide range of CLEVELAND Milling Cutters shown on the opposite page, you can specify a CLEVELAND Gutter for every application . . . and know you are getting lower cutter cost per cubic inch of material removed.

CLEVELAND Milling Cutters assure maximum metal removal per grind. Wide chip space between teeth enables these cutters to perform smoothly in the most difficult materials. Correct axial, radial rake and relief angles provide efficient operation under all conditions. Moreover, CLEVELAND Milling Cutters reduce regrinding time by requiring minimum amounts of stock removal when resharpening.

Take advantage of these time-saving, money-saving features. Specify CLEVE-LAND Milling Cutters on your next milling application!



CLEVELAND MILLING CUTTERS



THE CLEVELAND TWIST DRILL CO.

P.O. Box 6656 * (1242 Kast 49th Street) * Cleveland 1, Ohio

Stockroom. New York . Atlanta . Cieveland . Detroit . Congo . Dallas . Los Angeles . San Francisco



BUY THE LOWEST-COST BATTERY YOU CAN FIND



New 800 amp-lar Model TGS Exide-Ironclad. Same outside dimensions as former 720 amp-lar battery. Other new 22%-in. high Exide-Ironclad Batteries in capacities from 400 to 1280 amp-lar. In the whole world, only the new Exide-Ironclad TG Super gives you so much battery power for so little. Packs 11% more power with no increase in size. That means your present trucks can do more work every shift. And this more powerful battery actually costs you less per amp-h. Same long Exide-Ironclad life potential for low annual cost. Search all you want. You'll discover, as most others have, that the Exide-Ironclad is truly the lowest-cost battery you can find. Write for our new bulletin. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 20, Pa.

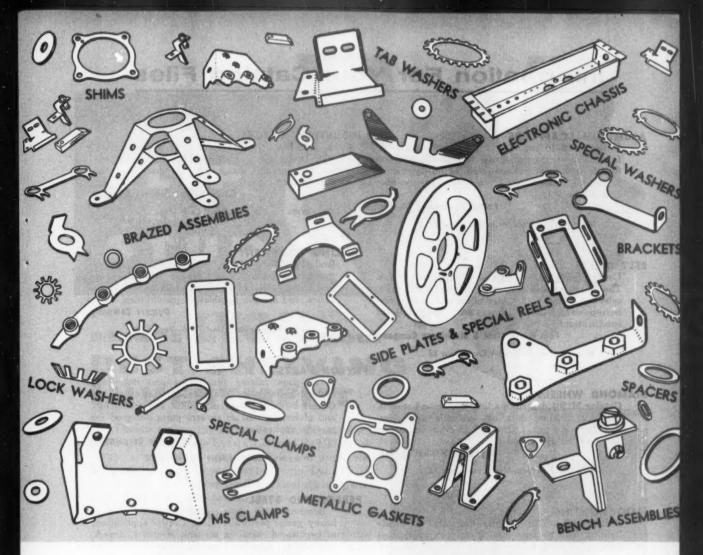


New Exide battery for small industrial trucks and personnel carriers. Model 3-KCS-9. Features new-design tubular positive plate. Up to 30% more capacity than automobile batteries. Up to four times their average life. Fits same compartment. Write for new bulletin.

Exide

For More Information about ad on facing page Write No. 183 on Place Mark Card—pg. 32→ PURCHASING

For More Information Write No. 182 on Place Mark Card-Page 32



You name it . . . we'll stamp it one or a million @ minimum cost

You'll get better service on Stampings from THE LAMINATED SHIM COMPANY. This is literally true because (a) we've been doing it since 1913, and (b) we've perfected our own special equipment, toolings and techniques-all unknown to

ONE PLUS" METHOD

Applies when you need just a few pieces for prototypes or experiment. We hold all critical dimensions, yet avoid tooling

SHORT RUN METHOD

More than "a few," but less than production quantities. Temporary tooling, simple dies and special presses keep costs

PRODUCTION RUN METHOD

prisingly low cost-according to our

Applies when quantity, tolerance, size and contour factors justify our standard production tooling and/or no

the ordinary stampings shop. Therefore you get

exactly what you want, including the degree of

precision you need-any contour, often without

dies-any size-any quantity-fast, and at a sur-

WATCH DOG" SERVICE

A routine procedure. We reevaluate repeat orders as to quantity and specs—then use the Method best for you.

Result: lowest possible cost per unit, regardless of quantity. Want more details? And suggestions for ordering Stampings economically? Send for STAMPINGS Folder No. 3-a most helpful reference booklet.



DIVISION . THE LAMINATED SHIM COMPANY, INC.

2406 UNION STREET, GLENBROOK, CONNECTICUT

Information For Your Catalog Files

ALUMINUM SCAFFOLDS

Bulletin AS-10 covers a line of aluminum scaffolds. The eight-page illustrated catalog includes details on ladder, sectional, and folding-type scaffolds. Also covers work stands and a one-man safety cage.

Patent Scaffolding Co., Inc.

Write No. 1 on Place Mark Card-Page 32

BELT DRIVES

Catalog Section 125 is a guide to wedge belt drives. The 28-page publication has illustrations for drive selection, along with tables of service factors and horsepowers. Gives dimensions, weights, and specifications.

Fort Worth Steel & Machinery Company

Write No. 2 on Place Mark Card-Page 32

DIAMOND WHEELS

Catalog M1501 describes a line of diamond wheels. Includes detailed data on available grit sizes, markings, and prices. Covers both resinoid bonded and new metal bonded types.

Raybestos-Manhattan, Inc.

Write No. 3 on Place Mark Card-Page 32

FLOODLIGHTING

Bulletin GEA-7201 outlines the value of floodlighting. The 10-page catalog includes application data and product information on a line of filament, mercury vapor, and fluorescent units.

General Electric Company

Write No. 4 on Place Mark Card-Page 32

FLUID DRIVES

Bulletin A-719 illustrates and describes a line of adjustable speed fluid drives. The 20-page twocolor catalog discusses principles of operation and shows typical applications. Horsepower and inertia starting capacity curves are also presented, along with direct-reading selection guide charts.

American-Standard

Write No. 5 on Place Mark Card-Page 32

HOSE

A 24-page two-color catalog on rubber hose for general industrial applications. Contains descriptions on over 35 specific types, along with illustrations and pertinent data. The types are classified in sections according to their service: air, steam, water, fire, etc.

Mercer Rubber Company

Write No. 6 on Place Mark Card-Page 32

INDUSTRIAL TRUCKS

A four-page folder illustrating and describing 7000-lb-capacity industrial trucks. Includes photographs, diagrams, and a complete analysis of each main working part.

Elwell-Parker Electric Company

Write No. 7 on Place Mark Card-Page 32

MILLING EQUIPMENT

Bulletin VM-60 covers three sizes of portable milling equipment. The six-page two-color catalog includes design features, specifications, accessories, and sample application possibilities.

Dumore Company

Write No. 8 on Place Mark Card-Page 32

NYLON PARTS

A six-page catalog illustrating and describing molded nylon parts available from stock molds. Covers bushings, washers, rollers, gears, bearings, and glides, as well as several parts designed for specific applications.

Nylomatic Corporation

Write No. 9 on Place Mark Card-Page 32

PERFORATED STEEL

Brochure 8159 gives complete specifications of heavy-gauge perforated steel. Covers applications of perforated metal as screens, strainers, dryers, separators, supports, guards, ventilators, and drains. Includes dimensions, unit weights, fastening methods, and equivalence tables.

National-Standard Company

Write No. 10 on Place Mark Card-Page 32

PLASTIC MACHINES

Brochure H6030-B describes plastic machines for various molding jobs. The six-page bulletin includes six models of conventional injection machines and eight models of perplasticizing injection machines. Tables of specifications are included, along with illustrations and job application photos.

Kochring Company

Write No. 11 on Place Mark Card-Page 32

PUMPS

Bulletin No. 600 describes a line of variable capacity rotary pumps. Includes cutaway illustrations of four basic models in either ball-bearing or packing-gland types. Gives selection procedures, application data tables, and performance curves.

Blackner Pump Company

Write No. 12 on Place Mark Card-Page 32



Design makes the difference! Don't settle for less than the exclusive Lyon CLIP and STUD which many have tried to copy but none can duplicate. Fully protected by Government patents, Lyon CLIP and STUD obsoletes conventional steel shelving and guarantees you these extra dividends—

- * Easy, fast, low cost assembly.
- ★ Complete flexibility—shelves instantly adjustable from the front without use of nuts, bolts or tools.
- * Tremendous structural strength and rigidity.

Another extra dividend from Lyon—oldest and leading steel shelving manufacturer—an experienced Lyon Storage Engineer and Lyon Dealer as near as your phone—ready to help you save space, time, money.



There are many types of Lyon steel shelving. Above—a mezzanine (double decked) stockroom in which the lower installation supports the entire second floor. A big saver of valuable floor space.

MAIL COUPON FOR THE 92-PAGE CATALOG

SHILL TOUR HILLS

OVER 1500 ITEMS

For Business, Industry and Institutions

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633	Monroe	Avenue,	Aurora,	Illinois		
	I would tion.	like to se	e a Lyon	CLIP and	STUD	demonstra-

I'd like a copy of your 92-page Catalog which tells the complete shelving story and covers entire line of products.

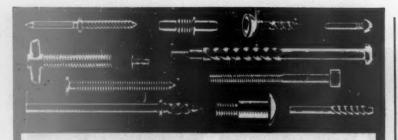
PIRM ADDRESS —

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A PARTIAL LIST OF LYON PRODUCTS

Byter nes : Forming Class : Specing Film : Treat Stating : Colored Borror : Colored Borror : Colored Borror : Special Borror : Colored Borror : Special Borror : Colored Borror : Special : Market Borror : Treat Borror : Special : Special Borror : Wyon's Warrior : Wyon's W

LYON METAL PRODUCTS INC



Job-Designed Threaded Parts for Every Industry



Here is a fast, dependable, low cost, quality minded source of supply for JOB-DESIGNED threaded parts and fasteners of all types, in any metal, to fit your own particular assembly

problem. Recognize the fact that a fastener designed specifically to fill a seemingly complex assembly requirement can easily cost less than design modification to accommodate so-called standard rivets. Assembly costs are a very major part of manufacturing expense. Most of this is labor. The fastening medium itself is usually a minimum item. If a Job-Designed fastener makes assembly simpler and faster, permits the use of fewer fasteners. allows the designer functional freedom and improves product efficiency, yours is a specifying job well done. All these possibilities are available when you come to Hassall for design assistance and quotation on challenging, difficult or unusual rivets, threaded nails, drive screws and other cold headed parts. Short or long runs, pilot quantities, engineering counsel, over 100 years of intimate association with cold heading—and a deep appreciation and regard for the concept of value analysis—all are a part of the Hassall service to you.

Send for a copy of our latest catalog.

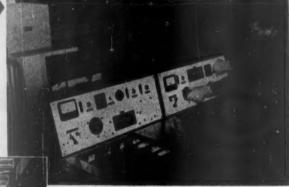
JOHN HASSALL, INC.

MANUFACTURERS SINCE 1850 P.O. Bax 2268, Westbury, Long Island, N.Y.

For More Information Write No. 185 on Place Mark Card-Page 32

These JET PLATERS are used to gold-plate some of the printed wiring boards for the SAGE Computer — as well as for experimental IBM equipment currently under development.

Heart of our SAGE System is the 275 ton IBM Computer. Shown here are some of the computer frames computer frames containing pluggable electronic units which perform data processing to solve air-defense problems.



IBM SAGE COMPUTER CIRCUITRY PLATED WITH SEL-REX BRIGHT GOLD

The 275 ton computer pictured, in part, above has 7,300 pluggable units containing printed card assemblies. To help maintain the "built in" reliability for which I B M is famous the world over, these assemblies were plated with Sel-Rex Bright Gold Process. The precision-plating required by this application was done in four JET PLATERS—complete precious metal plat-

ing facilities in a single compact cabinet.

When the unique metallurgical properties of a precious metal are required—without the shortcomings of conventional electroplate—leading missile, electronic manufacturers and Government Agencies specify SEL-REX. Learn why from our latest catalog #EL-1, FREE on request.



The World's Largess Selling Precious Metal Electroplating Processes
For More Information Write No. 186 on Place Mark Card-Page 32.

Catalog Files

SIGNALING EQUIPMENT

Catalog 160 describes air and electric signaling systems. The 88-page manual lists specifications of horns, bells, buzzers, chimes, and sirens. Charts and diagrams aid selection of the proper type of signals for various applications.

Sporti Faraday, Inc.

Write No. 13 on Place Mark Card-Page 32

SILICONES

A 12-page guide to the physical forms of silicones. Contains engineering data and processing information. Also describes typical applications and details important electrical and mechanical properties.

Dow Corning Corporation

Write No. 14 on Place Mark Card-Page 32

TRANSFORMERS

Bulletin 151 describes a line of variable transformers for low voltage applications. Covers transformers with input voltages of 36 volts or less and with output currents of 5, 12, and 22 amperes.

Chmite Manufacturing Company

Write No. 15 on Place Mark Card-Page 32

TUBE FITTINGS

A 118-page illustrated catalog of original equipment and replacement tube fittings. Includes specification tables and large cutaway drawings of the various products.

Lenz Company

Write No. 16 on Place Mark Card-Page 32

WELDING

Form ADC 709G gives information on manual, semi-automatic, and automatic welding equipment. Also contains data on accessory equipment, tungsten electrodes, and filler wires used in conjunction with this process. The 24-page illustrated booklet describes holders and an outfit self-contained in a carrying case.

Air Reduction Company, Inc.

Write No. 17 on Place Mark Card-Page 32

Performance makes the world of difference



Powell . . . world's largest family of valves

Need IRON valves? Powell can supply them. Need any other valves? Powell can supply them, too—and almost immediately from large factory or distributor stocks.

Powell makes more types of valves, has probably done more research, solved more valve problems and filled more valve needs than any other organization in the world. Yes, you name it! Powell has it! Just the right valve to handle water, oil, gas, air, steam, corrosive fluids—even missile and rocket fuels.

For quick action—no costly plant shutdowns, no operational delays—contact your nearest Powell distributor or us direct,

THE WM. POWELL COMPANY . DEPENDABLE VALVES SINCE 1846 . CINCINNATI 22, OHIO



INDUSTRY'S CHEMICALS

What's making news?

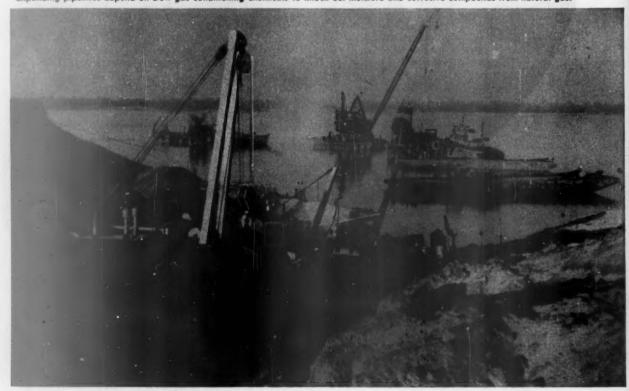
From crude oil, common denominator for the petroleum industry, floods endless energy and convenience—and knotty problems for the producer. Oil's natural brother, natural gas, reveals a similarly complex personality. Dow is active in the industry's production battle with both . . . providing specialized chemicals and experienced technical assistance on many petroleum fronts. Here's where Dow's industry-oriented approach pays off, serving petroleum's special requirements with special research, development and trouble-shooting facilities. Typical of Dow's across-the-board service to petroleum is its bustling activity in gas conditioning circles . . .

FAST-GROWING FUEL STAYS "SWEET AND DRY" FOR HALF-A-MILLION MILES

It isn't news to people in the petroleum and gas industries that last year, over 10 trillion cubic feet of natural gas travelled half-a-million pipeline miles to heat U. S. homes and industry. Ever-present chemical gas conditioners kept transmission and distribution systems sound and corrosion-free. Conditioning chemicals have been an important element in natural gas' spectacular growth . . . a seven-fold increase in the last 30 years!

Why "condition" natural gas? Because, fresh from the well, it's an unruly combination of natural gas, gasoline, acid gases, water and other compounds which easily eats through steel piping and equipment necessary to move it to market. Gas conditioning removes these compounds, the most notorious of which is hydrogen sulfide...a poisonous acid gas with the odor of rotten eggs. Water, another bad actor, reacts in pipelines, speeding up corrosion, causing pressure-dropping deposits. These trouble-makers are knocked out by Dow chemicals.

Expanding pipelines depend on Dow gas conditioning chemicals to knock out moisture and corrosive compounds from natural gas.



In processing towers, Dow ethanolamines scrub out the acid gases which, in some cases, are recovered and made into useful products. To take out water, processors use Dow glycols, thirsty chemicals which completely dehydrate the gas stream. Voila! The gas is now dry and "sweetened", ready for its pipeline journey . . . without threat to the life of the line.

Chemical dectors. Conditioning has its headaches, like most chemical processes. When the process sickens and standard remedies don't work, Dow gas conditioning specialists are called in. From long experience, they often prescribe on the spot. Frequently, however, Dow's Gas Conditioning Laboratories enter the case. Here, Dow chemists analyze the problem . . . duplicating the process, if necessary, in the laboratory . . . to put the process back on stream. A most useful tool in such cases is Dow's voluminous file of successfully-solved case histories.

Typical of Dow's gas conditioning help was the case of corrosion in a customer's gas processing system. Working from chemical clues and corrosion theory, Dow chemists proved the corrosion inhibiting value of sodium vanadate—and put a sudden stop to the customer's costly problem. In another case, Dow research uncovered valuable new information on activated charcoal

for purifying gas conditioning chemicals. Yet another example is Dow's recent development for the industry of an improved method for analyzing natural gas components quickly and economically.

Meanwhile, back at the well, Dow is at work in many other phases of petroleum. In finished oil wells, a heavy sheath of mud fills the annular space above the packer, keeping oil and gas contained by sheer weight! But mud solids settle out. Now, Peladow®—Dow calcium chloride—is used to make economical high-density brines which do mud's job without its shortcomings. And drillers rely on Dowell—a Dow service division—for increased production by acidizing wells, fracturing formulations, and a score of other essential services.

At refineries, stationary engines get increased efficiency and freeze protection from Dowtherm® 209—a Dow heat transfer medium for ebullient cooling systems. Engine and boiler parts are protected from ash buildup and corrosion, thanks to another Dow development—a new dry form of magnesium hydroxide.

Toilered to fit. After World War II, industry developed an insatiable thirst for more and more aromatic solvents. Dow took a newly-developed family of polyols, and chemically tailored a num-



Dow's miniature gas conditioning plant provides quick answers to customer problems.

ber to selectively extract from petroleum super-pure grades of the aromatic compounds wanted. This process was then engineered for production use by Universal Oil Products Company. Because of high production rate and super-purity of the extracted solvents, this Udex® Process is now used in 23 plants around the world.

Peladow completion brines save drillers time and trouble.



SOMETHING FOR EVERYONE. This petroleum story is only one chapter in the history of industry-oriented chemistry at Dow. No matter what your field of business, chances are Dow chemists have developed answers to problems you're werrying about now . . . and chemicals that make those answers workable. Why not find out? We've prepared a number of digests which show the reles Dow chemicals play in major industries; among them the Petroleum, Automotive, Paint, and Mining Industries. For your copies, or for more information on Dow chemicals, write THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Merchandising Department 301 EE6-6.

THE DOW CHEMICAL COMPANY
Midland, Michigan



For More Information Write No. 188 on Place Mark Card-Page 32

FOR VARIETY STANDARDIZE 100% ON SOUTHERN FASTENERS

A stock of 1,500,000,000 USA-made fasteners means that Southern's variety of items, sizes, materials, head styles and finishes can be your source of constant supply. Standardize 100% on Southern fasteners, and forget about carr,ing a large, costly, space-consuming inventory. Let Southern's variet/ and famous service help solive your fastener problems.

It will pay you to try Southern on your next order. Write today, using our letterhead, for our Stock List showing current variety of fasteners ready for delivery in large or small quantities. Address Southern Screw Company, P. O. Box 1360, Statesville, North Carolina.

Manufacturing and Main Stack In Statesville, North Carolina

WAREHOUSES:

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Machine Screws & Nuts • Tapping Screws • Wood Screws • Steve Bolts • Drive Screws • Carriage Bolts • Continuous Threaded Studs



For More Information Write No. 189 on Place Mark Card—Page 32

Letters To The Editor

TOOLS OF PURCHASING

Dear Sir:

Thank you for permission to reprint "When Mistakes Are Enforceable" from the legal article in your August 31 issue. I would like to say again how helpful I find Purchasing Magazine as a practical tool in teaching purchasing.

J. H. Holland, Professor Management Department San Jose State College San Jose, Cal.

LINEAR PROGRAMMING

Dear Sir:

I have read with interest the series of articles by Dr. Spencer B. Smith which appeared in Purchasing Magazine. While his application of linear programming is not of immediate interest to our current work, I feel certain they will prove of value in an investigation we hope to undertake late this year.

D. Williams National Coal Board London, S.E. 11

WHO SHOULD EXPEDITE?

Dear Sir:

The inplant expediter is here to stay. His useful function as a coordinator is a valuable tool in modern business.

His counterpart—the expediter who devotes his time and a large part of his company's telephone budget trying to persuade vendors to deliver an order as promised—should be reduced under existing conditions of ample stocks and full capacity production

Too many firms with national reputations, and big enough to know better, are content to let the customer's expediters influence their shipping schedules. They seem to reason that the wheel which most needs grease will squeak loudest, but can easily be quieted by a part or token shipment and a promise of more to come.

The acceptance of a bonafide order, complete with shipping schedule, places an unavoidable obligation on the vendor to carry out the contract. Furthermore, the vendor should undertake to report progress from time to time, particularly if it appears that a delay is in the making.

So what happens? Usually nothing until the customer's expediter picks up his phone. The vendor then comes to life and often enough accomplishes miracles. Miracles, however, are necessary only when planning is poor and the vendor is not dependable. The exercise of well established business methods are much better.

Accept the order; service it in the vendor's own plant by his own personnel; deliver it on time; or advise the customer in advance of possible missed shipments.

Sounds simple. Yet, how many businesses render such dependable service? Can you name three? Can you name one?

Buyers have usurped the proper function of the vendor's order service department for too long. Let's give it back to them.

James Rintoul, Purchasing Agent The L. C. Doane Company Essex, Connecticut

BUYING WORLDWIDE

Dear Sir:

We would appreciate any data you might have available regarding procurement from foreign sources. Reference to articles previously published in your periodical would also be helpful.

We are interested in what types of materials might most advantageously be procured from a foreign source. We are looking for comparable quality at a lower landed cost. Obviously, we are trying to benefit from the experience of others to the extent possible.

Name Withheld Upon Request

• Most of our published articles on this subject do not relate to specific materials. We suggest that anyone wishing this type of information communicate directly with a fellow purchasing agent in England or Europe. They will be only to glad to help all they can.



New styles from world's largest manufacturer of children's dresses arrive at fashion show fast . . . delivered by AIR EXPRESS

"Cinderella" is first to market with Air Express

These youngsters are about to model the latest collection of "Cinderella" frocks for the junior set. This debut of new creations by Rosenau Brothers is the "Paris showing" of the children's market. New fashions often must bow at buyers' showings thousands of miles from the Philadelphia factory just hours after the last stitch was sewn-or lose a big order. That's why Cinderella takes no

chances - ships by AIR EXPRESS regularly. Only lowcost AIR EXPRESS assures overnight delivery coast to coast. These advantages could help you, too! Call AIR EXPRESS and be FIRST TO MARKET...FIRST TO SELL.





CALL AIR EXPRESS DIVISION OF RAILWAY EXPRESS AGENCY . GETS THERE FIRST VIA U. S. SCHEDULED AIRLINES

25% LONGER LIFE RIGHT DOWN THE LINE



GOULD MOTIVE POWER BATTERIES HAVE THE NEW SILCONIC PLATE THAT:

 lengthens battery life = minimizes overcharge effects = lowers battery self-discharge = reduces operating costs.

See your Gould representative for more information. He's listed under "Batteries—Industrial" in the Yellow Pages. Gould-National Batteries, Inc., Trenton 7, N. J. IN CANADA, WRITE TO GOULD-NATIONAL BATTERIES OF CANADA, LTD.. 1819 YONGE STREET, TORONTO, ONTARIO.

More Power to you from









Gould "Fulpowr" Unit

For More Information Write No. 191 on Place Mark Card-Page 32



you can't beat Simonds Circular Saws

Take Simonds famed line of solid tooth, Red Center Saws — they cut wood fast and straight . . . they stay sharp, hold their corners . . have longer overall life. Starting with its own special alloy steel and using its own heat treating techniques, Simonds develops a saw plate that stays flat, holds tension much longer than ordinary saws.

Add to this Simonds years of toothing, grinding and sharpening know-how and you're sure of the very best in quality and exactly the right type saw for your particular job.

Or, if you need the special, long-lasting qualities of Carbide Tipped saws, you can't beat Simonds. Made with an extra tough plate steel, Simonds features wear-resistant carbide tips that have identical clearance angles so that every tooth does its share of the work.

Whether you're cutting hardwood, softwood, plywood, hardboard, plastics or any composition materials, there's a Simonds Carbide-Tipped Saw just right for your needs.

Most sizes and types of both solid tooth and Carbide Tipped saws are available from stock at your local Simonds Distributor.



Factory Brenches in Boston, Chicago, Shreveport, La., San Francisco and Portland, Oregon • Canadian Factory in Montreal, Que. • Simonds Divisions: Simonds Steel Mill, Lockport, New York; Heller Tool Co., Newcomerstown, Ohio; Simonds Abrasive Co., Philadelphia, Pa. and Arvida, Que., Canada

GRAMIX COMPRESSOR BODY

GENERAL ELECTRIC AIR CONDITIONER

this GRAMIX part is a new concept in powder metallurgy techniques . . . engineered to meet requirements of GENERAL ELECTRIC'S new compressor design

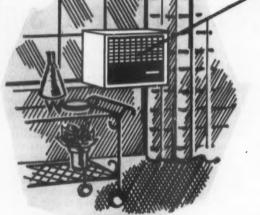
This large, complex shaped compressor body which is employed in air conditioners manufactured by General Electric is an outstanding example of a GRAMIX part engineered and produced to exacting specifications. As in all GRAMIX products of powder metallurgy, the alloy was created to meet exacting physical properties required in this particular application. Correct briquetting, controlled sintering procedures, precise finishing operations and rigid quality control throughout the manufacturing process assures General Electric uniform, dependable GRAMIX parts. The production of this body as a product of powder metallurgy has also enabled General Electric to effect important design changes in their air conditioning units.

GRAMIX engineers have the experience, the techniques and the equipment to produce top quality products of powder metallurgy. No matter what type of part you need, no matter what characteristics that part must possess, it will pay you to select GRAMIX . . . and get both "job-engineered" alloys and quality-controlled production to meet each specific operating requirement.



products from Powder Metallurgy.

Write loday for these helpful engineering monuals. No. 18 cavers design and metallurgical requirements and alloy selection of GRAMIX bearings. No. 19 covers GRAMIX Machine Perts and No. 21 contains general information on GRAMIX

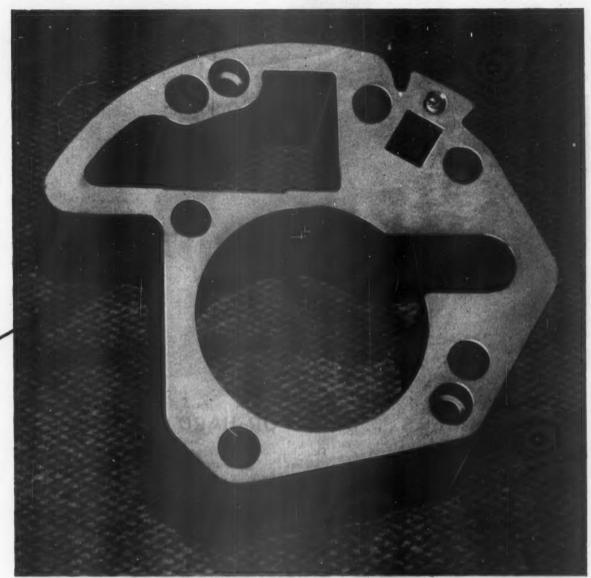




THE UNITED STATES

GRAPHITAR® CARBON-GRAPHITE - GRAMIX® POWDER METALLURGY - MEXICAN® GRAPHITE PRODUCTS - USG® BRUSHE

IS VITAL PART IN



This part is shown 11/2 times size. Actual weight: 21/4 lbs.

X-271-2

GRAPHITE COMPANY

DIVISION OF THE WICKES CORPORATION, SAGINAW 15, MICHIGAN

For More Information Write No. 193 on Place Mark Card-Page 32

JUNE 6, 1960

55



STAINLESS ... BEST FOR HARD KNOCKS



Thump it—rap it—scrape it! High strength stainless steel stays unscathed . . . stays unrivaled for body and fender protection. It's the *one* metal that completely meets the demands of today's quality-conscious, value-minded market.

And today, more and more fabricators of stainless trim and functional parts specify Uniloy for improved formability and product quality. Call Universal-Cyclops for Uniloy Stainless Steel in the exact grade and finish you need.



STAINLESS STEELS . TOOL STEELS . HIGH TEMPERATURE METALS

Purchasing People In The News

The Atlantic Refining Company, Philadelphia, Pa. has announced the appointment of F. N. Mann as manager of the firm's



F. N. Mann

purchasing department. He succeeds J. S. Parks, who has retired after nearly forty-five years of service. Mr. Mann joined the company's marketing department in 1934. In 1940 he was transferred to industrial relations and since 1945 has served as director of the company's marketing personnel division. He is a graduate of Drexel Institute of Technology, Philadelphia, Pa.

Parke, Davis & Company, Detroit, Mich., has announced the promotion of James B. Van Dusen to purchasing agent for non-pro-



James B. Van Dusen

duction materials. Mr. Van Dusen, who has been with the pharmaceutical firm for 10 years will supervise the buying of all non-production materials and services, except construction. He joined the company in 1950 as a junior buyer and four years later was named buyer. In 1957, he was appointed senior buyer, a position he held until his present promotion to purchasing agent. He is a graduate from the University of Michigan.

Donald O. Edkins has been named purchasing agent of The Dow Chemical Company's James River Division, Williamsburg, Va. Mr. Edkins replaces J. S. Anderson who has resigned. Mr. Edkins will supervise all activities in the purchasing department. Formerly in charge of accounting and pay offices in the James River Division accounting department, he has been with Dow for eight years. He was previously controller at the Framingham Plant Division until his transfer to James River in 1957. His duties at Framingham, for a number of years, included purchasing equipment, material and services for the division. He came to the company from General Electric Clock Division at Ashland, Mass.

Faultless Caster Corporation, Evansville, Ind. has appointed George L. Wood as director of purchasing. Mr. Wood joined the company as a purchasing agent of raw materials in 1958. He had been purchasing agent at Hoosier Cardinal Corp., Evansville, for 10 years. Previously he was material control manager at Reynolds Metals Co., Louisville, Ky. Mr. Wood attended Ohio Wesleyan University. He is a member of the Evansville Chapter of the National Association of Purchasing Agents.

Landers, Frary and Clark, New Britain, Conn., has made two promotions in its purchasing department. Guy E. Marshall has been appointed purchasing agent. He will be responsible for all matters relating to the purchase of raw materials for the company. Eugene C. Johnson be-



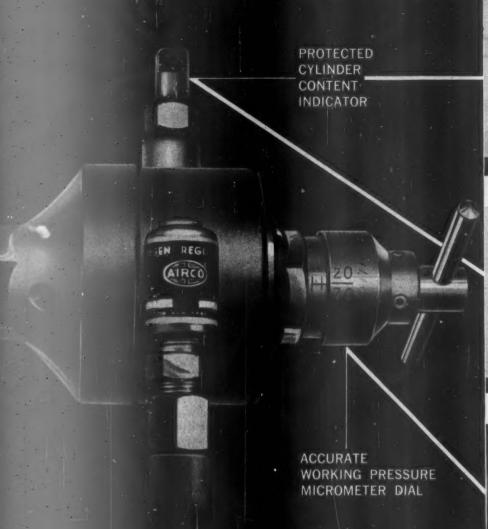
Guy E. Marshall

comes assistant purchasing agent. He will be responsible for all purchased parts. Mr. Marshall was formerly assistant purchasing agent. Prior to his association with the company he was purchasing agent for Bendix Aviation Corp. He is a graduate of



Eugene C. Johnson

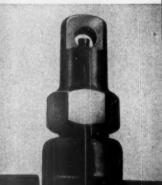
Mount Allison University in Sackville, New Brunswick, Canada where he majored in business administration. Mr. Johnson joined Landers purchasing department in 1937. He has attended Hillyer College.







Indicator at top of protective housing indicates a full cylinder.



Cylinder content indicator at half-full position,



Read working pressure directly from micrometer markings engraved on dial. Regulators for oxygen and acetylene service are available.

The new Airco Gaugeless Regulators for oxygen and acetylene give you the *pressure accuracy* you need, plus the *ruggedness* that regulators should have for construction and maintenance work, where rough handling is constant fare. That's because of the regulator's protected cylinder content indicator, and adjustable micrometer working pressure dial.

These rugged regulators are the newest in Airco's extensive

quality line . . . two more examples of how Airco experience brings you better welding equipment. Whether you need regulators, gas welding and cutting equipment, tips, supplies or industrial gases — your nearby Authorized Airco Distributor has them in stock. Look in your Classified Telephone Directory, under "Welding Equipment and Supplies," for your nearest Authorized Airco Distributor.



AIR REDUCTION SALES COMPANY

A division of Air Reduction Company, incorporated 150 East 42nd Street, New York 17, N. Y.

More than 700 Authorized Airco Distributors Coast to Coast

On the west coast— Air Reduction Pacific Company

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in Canada— Air Reduction Canada Limited All divisions or subsidiaries of Air Reduction Company, inc.

BUSINESS IN MOTION

To our Colleagues in American Business ...

The rapid development of the modern submersible water pump has resulted in the development of new applications for old metals.

Recently one of Revere's Technical Advisors was called in by a prominent manufacturer of this type pump for consultation regarding the diffuser casing which is a working part located in the interior of

their pump used in deep and shallow wells. It was made of a ferrous metal and, while it functioned satisfactorily as a part, it proved difficult to fabricate. In addition, tool life was alarmingly short. After studying the problem in cooperation with the manufacturer's engineers,

and consulting with the Revere Mills, Revere cartridge brass strip of a certain temper was recommended.

Samples were submitted, and after extensive tests approved for the part. The customer has found that not only does the diffuser casing, made of Revere Brass, perform well in the pump, but it also has

superior drawing properties, is more easily worked, and tool life has been substantially increased.

This meticulous attention to "fitting the metal to the job" also resulted in this manufacturer's specifying Revere seamless leaded brass tubing for the upper body shell of its submersible pumps. Here the application called for extremely close straightness

> and roundness control which meant special attention to detail on the part of the Revere Mills.

You have just read of two more examples of the vital importance of selecting the metal that is not only satisfactory from a functional standpoint but one that is equally satisfactory from

a production standpoint. For, what may be saved on one hand can very well be lost on the other, if the metal is not properly balanced to fit the conditions met, both in use and in fabrication.

It is only by taking your supplier into your confidence that you can ultimately produce the best possible product at the least possible cost.





REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Avenue, New York 17, N. Y.



EX-CELL-O CAN MEET YOUR DELIVERY DATE!

Service—like quality and accuracy—is another reason why precision-machined production parts have been a major Ex-Cell-O product line for nearly 40 years.

Ex-Cell-O's facilities for production of aircraft and miscellaneous precision parts and assemblies include: complete product design and development service; a full range of metalworking skills and equipment; in-plant laboratory control to insure quality from raw stock to finished product; modern heat treating methods; up-to-date testing and inspection devices and techniques; and the production experience required to deliver any quantity of precision parts you need—when you need them!

Contact your local Ex-Cell-O Representative, or send your print or specifications directly to Ex-Cell-O for a prompt quotation.



EX-CELL-O FOR PRECISION

EX-CELL-O



RIGHT NOW?

EX-CELL-O CAN SHIP THEM TO YOU TODAY!

Ex-Cell-O stocks more than 10,000 different standard size Drill Jig Bushings at key points throughout the country for sameday shipment to your plant regardless of location. Thousands of semifinished bushing blanks on hand speed orders for special sizes. Ex-Cell-O Drill Jig Bushings last longer because they're made better. Hole hardness is maintained at 62-64 Rockwell "C" with chrome-alloy bearing steel, heat treated with the most modern methods.

Order from the Ex-Cell-O Drill Jig Bushing inventory nearest you: Contact Ex-Cell-O Corporation in Detroit, New York, Downey, Calif., Cincinnati, Ohio and London, Canada. Write for Ex-Cell-O's Drill Jig Bushing Catalog today.

EX-CELL-O

Machinery Division

SEE EX-CELL-O'S BOOTH 946, NMTBA EXPOSITION

MMT-PE

MANUFACTURERS OF PRECISION MACHINE TOOLS . GRINDIN'
AND BORING SPINDLES . CUTTING TOOLS . TORQUE ACTUATORS .
RAILROAD PINS AND BUSHINGS . DRILL JIG BUSHINGS . AIRCRAFT
AND MISCELLANEOUS PRODUCTION PARTS . DAIRY EQUIPMENT

Help yourself Hindley Cotter Pins Hindley Manufacturing Co., Cumberland, R. Wire Hardware - Cottor Ping - Pin

For More Information Write No. 198 on Place Mark Card-Page 32

FOB-"filosofy of buying"

PROGRAM CHAIRMEN for sales groups have one secret for producing a sell-out meeting: get a purchasing man as a speaker. The Sales Executives Club of Detroit did that recently, and more. It invited a whole panel—Russ Stark of Burroughs Corporation, Marsh Pease of Detroit Edison, Harry Wurster of Wyandotte Chemical, Ernest Moser of Chevrolet, and Mrs. Betty DuChene of New York Bedspring Co. Result: the largest meeting attendance in the history of the club.

If some of Russ Stark's comments are representative of what the salesmen heard, then they spent a profitable evening. Here are some highlights from Russ' talk:

"There is nothing so discouraging to a buyer as an uninformed salesman. This applies to both those who don't know and those who won't say. Many times a buyer gets information from sales literature or advertising before he sees the salesman, then finds out the salesman doesn't know what's going on in his own company.

"When a salesman goes into a buyer's plant, the buyer must know for what purpose he is there if long-term relationships between buyer and seller are to be maintained. That's why we have 'lobby control.'

"Both the salesman and the purchasing agent should approach mutual programs with an open mind. You know there are some people who are so prejudiced they won't even listen to both sides of a phonograph record."

Purchasing's onward and upward march to greater recognition continues unabated. Consider these items:

• Walt Willets, District 8 chairman of N.A.P.A.'s Committee on Professional Development, han-

dled all arrangements for a purchasing workshop held at the Statler Club, Cornell University, Ithaca, N. Y. On his arrival Walt found a large basket of fruit, compliments of the club, in his room. Later, making an inquiry at the desk, he caught sight of a list of names. Alongside his own, in large letters, appeared the notation, "V.I.P."

- Ford Motor Company reports that a Philadelphia family of five owns four—count them—four Fords (Dad presumably takes a train to work). And who is this four-car family head? A purchasing agent—Arthur M. Wilson of National Lead.
- If Russia is ahead of us in some things, perhaps it's because she has the right ideas about some things. David Granick, economic authority on the Soviets, writes in his new book, The Red Executive: "The Soviet manager is oriented to production. Volume of output is the acid test of his work. Marketing is no problem; finance is a trivial concern. But the purchasing department is the rock on which the factory organization stands, for supply shortages lead to production shortages. A good procurement man is above price."



"I've been working for you 25 years now, Mr. Scott, and I'd like to ask your permission to quit."

Is IT just New York? Or is understatement becoming a national characteristic in America? Within a week or so we have come across the following expressions:

"Very perfect!" (N. Y. Post critic in a movie review.)

"Here y'are — get the latest final!" (42nd St. newsdealer.)

"He had acres and acres—millions of m les of acres!" (Long Island Rail Road commuter.)

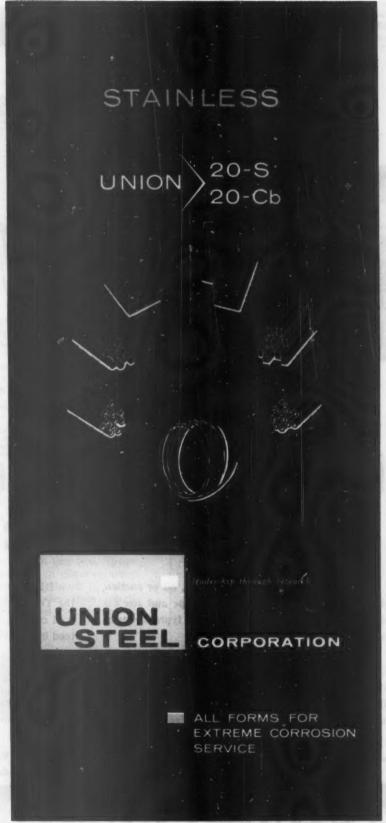
Y OU CAN DRAW YOUR own conclusions from this:

Leonard T. Dixon, writing in the April Sales Management, reports that a leading American company "deliberately lowered its requirements for field sales applicants. The company began to select men who had had at the most two years of college—men who scored in the middle, rather than the top range of intelligence tests—and they built what was acknowledged to be the finest field selling force in the country."

ADD TO YOUR list of impressive reports to management: City Purchasing Agent Andy Lehrbaummer's annual report on the activities of Milwaukee's Central Board of Purchases.

N ICE IDEA from the Purchasing Agents Association of Detroit: When a member completes 10 years in the association, he is presented with a solid gold N.A. P.A. pin at the next regular meeting.

NEXT TIME you're wearing your N.A.P.A. pin, don't be alarmed or insulted if someone walks up and asks you for a new muffler. Another N.A.P.A.—the National Automotive Parts Association—has begun a big advertising and publicity campaign. "Wherever you go . ." the head on a recent ad in the Saturday Evening Post says, "N.A.P.A. is there to help you through your repairman. Remember the sign with the N.A.P.A. seal."



For More Information Write No. 199 on Place Mark Card—Page 32

For More Information about ad on following page

Write No. 200 on Place Mark Card—pg. 32→



Whether it's for air, water, steam, oil or suction, there is a Gates Hose of the right type and size for the continued safe performance of all types of equipment—at sea, on land, or in the air.

Back of the world-wide acceptance of Gates Hose is a continuing program of specialized hose research at the multi-million dollar Gates Research Center. The aim of this program is to broaden the usefulness and lengthen the life of hose for all industries.

Distributors of Gates Industrial Hose are listed in the Yellow Pages of phone books in all major industrial centers. Performance of this product is guaranteed by the World's Largest Maker of V-Belts.

Geres Type 19-8 Hose carries air, water, coolants, oils, greases, gasoline, kerosene, or solvents. This popular hose—one of many in Gates full line—is always available from your nearby Gates Distributor.

The Mark of Specialized Research



The Gates Rubber Company . Denver, Colorado

Gates Rubber of Canada Ltd., Brantford, Ontario

TPA 47

Gates Industrial Hose

Made in a Full Range of Types and Sizes

In Purchasing...

THE TOUGHEST thing about carrying out a cost reduction program isn't always finding ways to cut costs. It's letting others know what you're doing and getting them to cooperate. In other words, good communication is essential. For some bright ideas on starting an organized cost reduction drive and keeping it going, see the article on page 70.



Our March 14 issue on transportation was a tremendous success. (The entire issue, for example, has received special notice in an announcement of new materials added to the Transportation Col-

lection of the Baker Library, Harvard University Graduate School of Business Administration.) We're not resting on our laurels, however. We will continue to bring you the best available material on traffic and its relation to purchasing—e.g., "Don't Pay Excess Freight Charges" on page 75 of this issue.

How is your inventory control program coming? Have you established economic ordering quantities yet? Well, if you've been too awed or too baffled by some of the more high-flown mathematics you've been reading about lately relief is in sight. On page 78 we present the basic facts you need to set up an E.O.Q. system of your own. Here's a chance to master a scientific method for inventory control in a relatively painless way.

When you manage to handle an increased workload without increasing the size of your department, that's good purchasing. But when you're able to do it with fewer people than before, that's not only good purchasing—it's news. Read all about it on page 82.

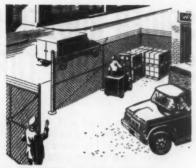


Be sure to see the increasingly popular Forms Forum section in this issue (page 84) for ideas on how to improve your paperwork. The current batch of forms features a purchase order from which the acknowledgment and the accounting

department copies have been dropped.

If you missed the annual convention of the National Association of Purchasing Agents in Los Angeles you can get a full report of the proceedings in our June 20 issue. If you were there you can use this complete record to refresh your memory and embellish your own convention report to management.

Ray Richards
Publisher



About that property of yours...

PAGE

These 3 VALUES are important

1. QUALITY is important. When you invest in a fence you want it to last for a long, long time. When you specify PAGE you get 77 years of our experience in the design and manufacture of a quality fence. Page Fence is engineered for long-lasting service and is covered by a Registered Certificate of Quality.

2. WIDE CHOICE is important. For example, we offer a choice of 4 chain link fabrics—Acco-Aluminized, our latest development, or galvanized steel, stainless, or solid aluminum. Each of these has characteristics which meet individual preferences or make it more suitable to meet certain climatic or service conditions. Furthermore, there are 8 basic fence designs and 6 gate styles. No other company can serve you with so wide a selection.

3. INSTALLATION is important, too. A fence can be no better than the quality of its erection. The Page Fence Member in your locality is trained, experienced, responsible, and interested in your satisfaction.

When you write us, we'll send you the whole story in a helpful booklet, and the name of our nearest Member. Call him, he will gladly suggest the best answer to your property protection problem.



PAGE FENCE ASSOCIATION
National Headquarters • Monessen, Pa.
A product of Page Steel & Wire Division
American Chain & Cable Co., Inc.
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on Place Mark Card-Page 32

SPICER RUBBER ELEMENT SHAFTS CAN HELP YOU SOLVE YOUR TORSIONAL RESONANCE PROBLEMS

If you are faced with the problem of torsional vibration from impulses within the operating range, Dana engineers may be able to help you solve your design problems.

Spicer resilient propeller shaft assemblies have been used successfully for years in rapid transit cars, street cars, engine dynamometer, truck, bus, earthmover and passenger car applications to solve difficult torsional problems.

Spicer rubber-cushioned shafts make it possible for design engineers to "tune out" the vibration and thus produce commercially acceptable installations.

Spicer rubber-cushioned propeller shafts offer these additional advantages:

- The torsional flexibility limits the effect of high impact loads resulting from rough shifts and other sudden torque changes.
- 2 The cushioning effect prevents clatter, rattle, and backlash noises.
- Increased life of bearings, gear teeth, splines, and other components due to the reduction of high impact and torsional loads.
- 4 Reduction of noise transfer.
- 5 Axial flexibility to cushion forces resulting from length changes.

Product knowledge and years of experience are available to you through Dana engineers to help solve your torsional problems. Contact them today.



International 295 Payscraper, equipped with a Spicer rubber element shaft, at work on the Interstate Highway System.



Toledo 1, Ohio

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For More Information Write No. 202 on Place Mark Card-Page 32

PURCHASING

- PURCHASING MEETINGS PAY OFF-One of the quickest ways for a P.A. to build a high-powered buying staff is through meetings. The purchasing department at one major fabricating company has weekly meetings devoted mainly to cost reduction, then follows up with monthly dinner meetings. The dinner meetings give the buying staff a chance to get away from the phones and to talk over their problems in a more relaxed atmosphere. The dinner meetings also double as an executive training program. Each month a different buyer is put in charge of arranging a program for the evening. This usually means giving a short talk on the market outlook for specific commodities and then showing a vendor film. It's invaluable training to bring junior buyers along fast.
- A CLEAN SALESMAN IS A HAPPY SALESMAN—Purchasing agents often complain of the sloppy appearance of some salesmen that call on them. A New England firm figures that sometimes a salesman's appearance isn't always his own fault, especially if he's had to walk through rain, mud, or dust. It has installed an electric shoe polisher and buffer in the lobby. The visitor simply steps on a switch and the mud and grime are brushed off quickly.
- CHECK YOUR WEIGHT-Don't forget postal scales when you're arranging for periodic maintenance checks of office equipment. Even a slight error in the scale may be costing you a fair amount in unnecesary postage.
- GET EQUIPMENT BLUEPRINTS—It's a good idea to get and hold on to blueprints
 whenever you buy capital equipment. They'll come in handy when
 you need replacement parts or repair work. You can negotiate from
 strength with several vendors, instead of being tied down to one.
- STANDARDIZE EXPEDITING LANGUAGE—Walk into engineering some day and ask three people their definitions of "Rush", "Soon as Possible," and "Immediately" as applied to requisitions. You'll probably come out even more confused than you are now. A North Carolina purchasing department has eliminated its own semantic difficulties by getting engineering to agree on a set of definitions for degrees of expediting. "Expedite A" means purchasing will specify shipment date on order and check by letter if delivery is one week overdue. "Expedite B" means purchasing will check one week before specified shipment, and so on.
- ARE YOU OVERLOADED WITH RECORDS?—Herb Layport, Wyman-Gordon Co., says it's simply purchasing department boundoggling to keep records easily available from other departments. If you need cost data, why not get it from the cost department or accounting department, he says. "And our small stores and major stores keep complete records of material, inventory, receipts and disbursements. Why should we duplicate such records?"



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For More Information Write No. 203 on Place Mark Card—Page 32

PURCHASING



Professionalism Or Provincialism?

Purchasing Magazine June 6, 1960 HARRY MOORE, director of purchasing for IBM, startled a New York Association forum meeting recently with a denunciation of "purchasing professionalism." Until he clarified his remarks in a post-meeting discussion, some of his audience were unhappy. They obviously didn't enjoy hearing such a prominent executive give such an apparent beating to their cherished idea of professional status for purchasing.

Mr. Moore's argument was that many purchasing agents are guilty of sub-optimizing: that is, they concentrate on bringing their own departments to top efficiency without regard for the rest of the company. The parts flourish, but the fundamental goal of management—an optimized whole—is never achieved.

Purchasing must know what the rest of the company is doing, Mr. Moore declared. It has a managerial role to play but will never be given a chance if it elects to specialize in buying alone. The sooner purchasing broadens its view and coordinates its work more closely with other departments, the better off it will be.

The difficulty came not over the argument, but over the term "professionalism." The advocates of professional standards for purchasing assuredly don't favor the attitude denounced by Mr. Moore. They simply want to see the establishment of certain requirements of formal training established as a basis for membership in a professional association of purchasing agents. They see a professional rating as no bar to future advancement in general management. Nor do they intend by professionalizing the P.A. to isolate him and his work from other company departments. (The notion once held by some purchasing professionalists, that P.A.'s be licensed practitioners, like engineers, has fortunately faded away.)

Perhaps the confusion would be cleared up by changing Mr. Moore's target to "purchasing provincialism" or "purchasing parochialism." Then we can all agree that we have something clearly bad to shoot at. A narrow, restricted view of purchasing will only lead the P.A. into a self-defeating maze as management forgets or ignores him—or what's more likely in these fast-moving times, abandons him altogether.

Faul V. Farrell

How Celanese Saves . . .

By putting cost reduction on an organized basis, Celanese
Corp. of America's purchasing department was able to report savings
of more than \$500,000 last year. Extremely important in making
the program work is the quarterly cost reduction newsletter
used to communicate cost reduction ideas to plant purchasing departments.

By Ned Kellogg,

Managing Editor

LAST WEEK a stenographer at a Celanese Corp. plant in Texas came up with a cost reduction idea: "Cut out airmail on letters sent out on Friday. Regular mail gets the letter where it's going by Monday so why waste postage?"

It's not the kind of cost reduction that will send Celanese Corp. of America stock zooming—probably won't save more than \$150 a year. But to Hank Michel (phonetically Mitchell), director of purchases for Celanese, it was an extremely important suggestion. Reason: the stenographer who had the idea works in the pur-

chasing department. Michel regards her concern about saving the company money a sure sign of how thoroughly the cost reduction concept has permeated the Celanese purchasing organization.

Of course, Celanese purchasing people have always been cost conscious—as are most purchasing people everywhere. But until three years ago, cost reduction efforts were largely hit or miss, with the exception of the purchasing department's highly successful standardization program. It was after the standardization program began to run out of gas—there's only so much you can do—that purchasing head Michel got together with Assistant Purchasing Director Frank Campbell,

Jr., to put through a formal, organized purchasing cost reduction program.

As whip-cracker for the program they picked a buyer from purchasing headquarters in Charlotte, N. C.: youthful, slide-rule-wielding Ed Swanson. It was an excellent choice. In little more than three years, Swanson put enough ginger into the program so that cost reductions turned in by the various Celanese plant purchasing departments last year totaled more than a half million dollars.

Aim at 1% Cost Cut

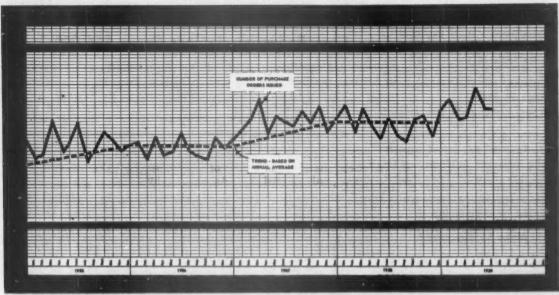
First step in setting up the cost reduction program was to establish a target. Celanese picked 1% of total outside annual purchasing volume as the corporate bogey, with each plant P.A. expected to save a minimum of 1% of his own purchasing volume.

Purchasing head Michel admits there was nothing very scientific about the way the 1% goal was selected. "A number of our men went to meetings where other companies discussed their cost reduction programs. In almost every case they seemed to be using 1% as a standard cost reduction goal. We had to start somewhere and we felt that what was good for them might work out for us. It has."

Since the start of the Celanese "Buying for Value" program, purchasing has met or topped the 1% bogey every year. And last year—the best from a cost reduction standpoint—Celanese purchasing saved more than 2% of its annual outside buying volume



Guiding hands that help keep the Celanese cost reduction program going: Assistant Director of Purchases Frank Campbell, Jr. (l.), and Director of Purchases Hank Michel.



Trend of Celanese purchasing activity shows up cleareach month with the trend based on the annual averly in this graph comparing number of orders issued

through its organized cost reduction program.

After the cost reduction goal was established, Ed Swanson drew up ground rules clearly defining what constitutes a valid cost reduction. The Celanese view is that cost reductions are savings resulting from changes: changes in specifications (Type A), and changes not affecting specifications (Type B).

Cost Reduction Examples

Examples of Type A cost reductions:

Substitution of materials or equipment

Change in packaging methods Type B cost reductions result mainly from:

Change in supply source Renegotiation of purchase price,

terms or conditions Changes in buying techniques-

such as using national contracts. Changes in transportation, han-

dling or storage methods

Changes in systems and procedures

Changes through standardization and simplification Improved terms of payment or

delivery terms Cost reductions based on make

or buy decisions

Use of repaired or salvaged ma-

CodeoQ(3)	144					
		cid (meta p				
VPE OF	RETUC FION	PROJECT STARTES		COSTAIRM		PROJECT INGOES
AS		Nov., 1958	March. 1959	Point Pleasant	Plant	12

certain blends would result in a feed equal t be priced to us at \$1.15 per gal. and that co that a savings would be realized. Therefore, for blending and it is hoped this can be repe

One time saving

No extra handling occurred since materials could be mixed either in feed or product tanks.

94.2		MOUNT OF SAYINGS		
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		DEPORTTIME COSTS		
CAPITAL	EXPENSE	INVENTORY LOSS	YOYAL G	PRETTING COURS
S DEPARTMENT APPECTED	S OTHER PARTICIPATING S	8	S Non	
Production	Laboratory, Ce	Plant Manage ntral Purchasing, Ope	erations Co	ntrol (MYO),
AUDITED BY	Junte	Annunt	pou	geA.
SUBMITTED BY:	40 Hones	Mer. Coerations Se		1/22/59

This is the cost reduction report form sent by plant purchasing personnel to purchasing headquarters on completion of a cost reduction project. To help give the program unquestioned validity, each cost reduction is audited by someone outside purchasing.

terial instead of making a new purchase.

Each plant P.A. is expected to have at least a dozen cost reduction projects in the works at all times in his department. As one is completed, the P.A. is expected to start another.

When a cost reduction project is finished, a report is sent to Swanson on a standard form (see cut). One of the novel aspects of the Celanese program is that every cost reduction reported has to be audited by someone in another department. Usually it's accounting or engineering.

Make Savings Audit

Swanson regards the audit as a must to make the program significant to top management. Says Swanson: "To be successful any cost reduction program has to have management support. If it doesn't, it's going to fizzle on the launching pad. The audit helps validate the cost reduction reports. Without it, there's a good chance management would be inclined to discount the results of the program."

But Swanson doesn't stop with just having the cost reductions audited. He goes even further to establish the validity of the program. Near the end of the year he sends a letter to all plant P.A.'s asking them to go over the estimates they made on the annual savings expected from the various cost reductions reported during the year. If it turns out that certain cost reductions saved more or less than was estimated. the records are corrected. This means that when Swanson turns in his year-end report on cost reduction savings, his figures are extremely realistic.

Swanson believes that every cost reduction should be reported—even if it's something that should have been done a long time ago. "If somebody was using a Cadillac to haul lumber and switched to a Ford station wagon, it's still a cost reduction so far as I'm concerned," says Swanson. "Ridiculous, maybe—but it still saves money."

Paradoxically, Swanson also

Cost Reduction Project Saves \$56,000

A startling example of the results Celanese purchasing is getting from its cost reduction program is a recent \$56,000-a-year packaging saving made at its Newark, N.J., plant. In some ways this saving is not typical of the Celanese cost reduction program since it was a group project. The work was done by a packaging committee composed of the purchasing agents at Celanese's Belvidere and Newark, N.J., plants, assisted by an industrial engineer. However, what this cost reduction does show is the kind of savings Celanese is getting as a result of putting cost reduction on a formal, organized basis. As explained by corporate Cost Reduction Manager Ed Swanson, here are the details of this bold cost analysis project:

"At our Belvidere and Newark plants we manufacture transparent cellulose acetate film which we wind on paper cores into rolls approximately 12 in. in diameter. Before the rolls can be packed in cartons for shipment, they have to be mounted on spacer boards. The boards serve two purposes: they support the rolls during shipment and also provide a small clearance between the finished roll and the sides of the carton to prevent abrasion. One or two corrugated pads are placed at each end of the carton as filler material and to provide resilience.

"First phase of the cost reduction project on this package was a review of the paper used as the core of the acetate film rolls. We had been using a core with a ¼ in. wall thickness made 100% Kraft paper. The tube had a guaranteed 45-lb psi crush strength in accordance with Celanese specifications.

The purchasing department suggested experimenting with a less expensive grade of paper tube known as Rhino

tion projects that don't work out.
"If a plant works on something
that seemed like a good idea but
found that it wouldn't pan out,
it's worth knowing about. It may
help us prevent some other plant
from wasting time on the same
idea."

Use Newsletter

Extremely important in keeping the Celanese cost reduction program alive is the quarterly "Purchasing Cost Reduction & News Letter" (see p. 74). It's prepared by Swanson; goes out over Director of Purchasing Michel's signature. The newsletter, modeled after the type sent out by Kaiser Aluminum (Purchasing Magazine, Mar. 16, 1959, p. 80), goes to all plant purchasing departments, other department heads and top management.

Purpose of the newsletter is

to relay cost reduction information to all the Celanese plant purchasing departments. It also helps keep up interest in the program.

The newsletter starts off with a rundown on the number of cost reduction projects completed each quarter and the estimated annual amount that will be saved by these projects. It also shows how the accumulated cost reductions for the year to date stack up against the 1% target for the period.

Usually the letter carries a detailed case history of one of the more unusual cost reductions reported during the quarter. And there is also a report on purchasing activity as gauged by the number of purchase orders issued to date as compared with the same period the previous year.

Swanson points out that the

made of 50% Kraft and 50% chip waste. The supplier would not guarantee the crush strength of the Rhino tube but tests by our lab showed that it varied between 40-42-lb psi. We ran field tests on over 3000 shipments before accepting the tube as the new standard. In more than 150,000 shipments there has not been a single tube failure. This change in paper is saving our Newark plant \$6700 per year.

"The packaging committee then went to work to cut the cost of the plywood spacers we had been using. In addition to being expensive, the plywood spacers had other disadvantages: Because of their rigidity they were difficult to handle in packaging and frequently sawdust from the plywood would get on the rolls. Another drawback: they were not sufficiently shock absorbent even when used with a corru-

gated pad.

"By changing specifications and suppliers, a new, less expensive chipboard spacer was developed which solved all these problems. More importantly the switch to a less expensive material is saving our Newark plant \$6400 per year.

"The next cost reduction in this project involved a change in the dimensions of the carton. Ideally the rolls of celluslose acetate film are 12 in. in diameter. However, rolling tolerances vary from time to time and from machine to

machine. This naturally causes the diameters of the rolls to vary.

"The standard carton we were using was

14½ x 14½ x 44 in.—large enough to package even outsize rolls. A study by the packaging committee, however, showed that only 5% of the rolls shipped were 12 in. or more in diameter. The balance ranged between 11½ and 12 in. Obviously, there was a good case for using a smaller carton for the bulk of the shipments.

"We had a new smaller carton designed which not only cost less but also makes it possible to use smaller, less costly spacers and dividers. For the outsize rolls we still keep a small stock of the larger cartons. Savings from using a smaller carton, smaller spacers and pads, and from the money we saved on reduced tare weight, totaled \$40,116 a year.

"This might seem to be the end of cost reduction on this project. It isn't. The packaging committee came up with another idea.

"Previously the bottom of the folded carton was stapled together while the top was closed with fiber-reinforced tape. Tests by the packaging committee showed that the tape was strong enough to hold the bottom of the carton as well as the top. The change from staples to tape saved the Newark plant \$2900 per year.

"Total savings for the Newark plant from this four-part cost-reduction project amounted to \$56,116, or 21% of the plant's annual purchases of cartons, spacers and pads. But there's more to come. Soon the Belvidere plant will make the same packaging changeover and similar results are expected."

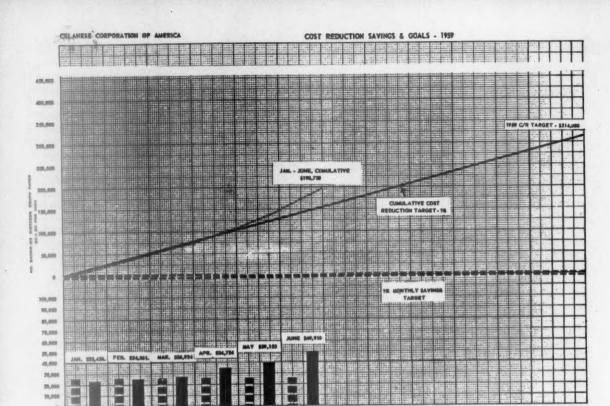
activity report informs plant P.A.'s on what's happening in overall corporate purchasing and it's also a subtle way to let top management know what purchasing is doing.

Attached to the newsletter are copies of the cost reduction project reports turned in by the plant purchasing departments. The reports describe the cost reduction idea, state how much the cost reduction is expected to save annually and bear the name of the person responsible for the idea. The newsletter also carries a composite sheet which shows month by month the number of cost reduction projects completed by each plant, and the estimated annual savings expected from these projects.

Obviously one of the main benefits of the newsletter—aside from being an effective form of com-



Cost Cutter Ed Swanson (I.) has been in charge of Celanese's highly effective cost reduction program for little more than three and a half years. Last year under his leadership the program saved the company more than \$500,000. Here he swaps ideas with Bill Durland (c.), P.A. for Celanese's Amcelle plant (Cumberland, Md.) and General Storekeeper Ed Duncan.



Cost reduction savings are graphically presented in the newsletter. Chart at top shows cumulative cost reduction savings plotted against the cumulative cost

reduction target of 1% of total outside purchasing volume. At the bottom, the same information is shown on a month-by-month basis.

munication—is the healthy competition it creates among the plants to outdo each other on cost reduction. That's one of the strong forces behind the program.

To make the progress of the cost reduction program easier to grasp, Swanson repeats much of the newsletter's tabular matter in chart form. Among the charts: a comparison of corporate purchasing's cost reductions to date with the cumulative 1% cost reduction goal; a month-by-month comparison of cost reductions vs the goal; a line graph showing the number of purchase orders placed against the overall trend based on annual averages.

Swanson adds a fillip to the newsletter by throwing in news about purchasing personnel.

As for the future of the Celanese cost reduction program, Swanson isn't the least bit afraid that he'll cost reduce himself out of a job. "As long as there are new products—we're making a big push in this area—there'll be room for cost reduction." > END



July 1, 1959

No. 59-3

At the halfway mark in 1959, our "buying for value" policy has resulted in a savings of almost \$200,000 in purchased materials. This indicates the responsibility each of us feels to contribute to Corporate profits. For the second half of the year, it is the considered opinion of most economists that we are facing a period when prices will be firmer and higher and an increased demand will be evident in some lines. This may make cost reductions more difficult to accomplish and will call for greater effort on our part to do the best buying job possible.

COST REDUCTION

Cost Reductions for the first \sin (6) months of this year are running at a rate well shead of our target level with a notable increase in savings during the second quarter. Number of projects completed together with total savings compare with target as shown below:

	1st Qtr. 1959	2nd Qtr. 1959	1st 6 Mos. 1959	lat 6 Mos. Target-1959	
Projects Completed Savings	66 \$74,933	53 \$123,797	129 \$198,730	\$157,000	

As shown on the Datail Sheet (attached) the increase in activity, as measured by the number of projects completed, during the months of May and June is particularly craditable in view of the heavy buying load currently being apparamed at all locations.

Celanese's quarterly cost reduction newsletter keeps plant purchasing departments posted on progress of the "Buying for Value" program. It also helps keep interest in the program at a high pitch.



Don't Pay Excess

Freight Charges

Unknowingly, you may be paying thousands of dollars each year in unnecessary freight charges. Here are some basic transportation pointers that can cut down your freight bills.

By Thomas F. Dillon

THOUSANDS OF DOLLARS are being wasted through the payment of excess freight charges. Money is spent needlessly on transportation because some P.A.'s don't know the basic rules and regulations and the fundamentals of traffic management.

There are two publications worth their price

many times over for purchasing agents concerned with railroad and truck shipments. For trucking, it's the National Motor Freight Classification—issued by the American Trucking Association, 1424 16th St., N.W., Washington, D.C. For rails, it's the Uniform Freight Classification—published by Tariff Publishing Officer, 202 Union Station, Chicago, Ill. Both books cost \$4.75.

For example, the National Motor Freight Classification indicates that the following ratings and rates apply on LTL shipments of plastic articles from Washington, D.C. to Atlanta, Ga.: (Turn page)

Mr. Dillon, credit manager for a large eastern trucking company, has worked in the transportation industry for nine years. He is a graduate of the University of Tennessee's transportation program.

Less than six pounds per cubic foot
Six pounds per cubic foot
but less than 12 pounds

but less than 12 pounds per cubic foot

12 pounds per cubic foot or over Class 85 \$3.26/cwt.

Class 100

\$3.79/cwt.

Since the purchaser bears the freight charges, either directly or indirectly—and since freight charges are about 10% of the cost of the average industrial item—ignorance or carelessness in transportation is costly. Excess freight charges place an added burden on a company whose competitors have skilled traffic management. Fortunately, many of these excess charges can be avoided by the P.A. with no traffic department if he makes use of a few basic transportation principles. Some of them are:

Released Value—Many articles have freight ratings based on their "released value". These ratings have been established with the approval of the Interstate Commerce Commission—the federal agency regulating the transportation industry—in order to limit the carrier's liability in handling certain items. In return, the carrier offers a lower rating than would otherwise apply on a shipment not "released" to a lower value.

Railway Express Establishes Incentive Program

Many P.A.'s are taking advantage of a new way to cut freight costs: the incentive system set up by the Railway Express Agency. Buyers are given an incentive—in the form of sharply reduced charges from first class rates—for shipping selected commodities between various cities.

These rates are effective on individual prepaid small shipments picked up in bulk lots of 300 pounds or more at one time but consigned to any number of different destinations. Not every origin point is covered by these rates.

The following table shows how these incentives work:

From New York S	hipment	First Class	Incentive	Redu	ctions
To:	Weights	Charges	Charges	Dollars	Percent
1. Los Angeles	50	\$12.98	\$ 8.01	\$ 4.97	38.3%
2. Detroit	45	6.57	4.13	2.44	37.1
3. Dailas	20	4.98	3.13	1.85	37.1
4. Jacksonville	25	4.61	2.90	1.71	37.1
5. Chicago	45	7.02	4.41	2.61	37.2
6. Atlanta	20	3.98	2.53	1.45	36.4
7. Philadelphia	40	3.90	2.51	1.39	35.6
8. Denver	20	5.29	3.32	1.97	37.2
9. New Orleans	25	5.34	3.39	1.95	36.5
10. Boston	- 35	4.16	2.67	1.49	35.8
TOTALS	325 Lbs.	\$58.83	\$37.00	\$21.83	37.1%

For instance, look at the classification ratings for "internal combustion engines, NOI" (not more specifically described in the classification). If the engines are released to a value not exceeding \$2.50 per pound, the rating is Class 85. If they are released to a value exceeding \$2.50 per pound but less than \$5.00 per pound, the applicable rating is Class 100. If the value is not declared in accordance with one of these two provisions, a Class 150 rating will apply.

Thus on an LTL shipment from Utica, New York to Vicksburg, Miss., the following rates would apply per hundred pounds: Class 85—\$4.89; Class 100—\$5.72; and Class 150—\$8.43. By indicating the "released value," you can save a lot of money.

Lower "Release" Value

In this case, the engines may actually be valued at a higher figure and still be "released" to the lower figure to obtain a lower rating. The released provision merely sets the maximum for which a loss or damage claim will be paid. It does not concern the "actual" value of the item. In normal practice, many shippers release their shipments at less than actual value and carry an insurance policy to cover any damage above the "released value."

Actual Value—Item 26880 of the National Motor Freight Classification provides for a "released" rating on "Clocks, NOI." The ordinary household alarm clock is rated under this item. On an LTL shipment, if the "actual" value of each clock exceeded \$2.75, a class 125 rating would apply. If the value of each clock did not exceed \$2.75, a class 100 rating would be applicable.

However, in order to have the lower rating apply, the shipper must place the following notation on the shipping order and bill of lading:

"Actual value of the Clocks, NOI, is hereby stated by the shipper to be not in excess of \$2.75 each."

If the shipper fails to indicate the value, he will be charged the higher rating.

Description—it is important to give a complete description of the article shipped. You may know exactly what you are shipping. Your warehouse foreman may know. The carrier's sales representative who calls on you regularly may know. The terminal manager or freight agent may know. But if the rate clerk does not know (and he normally never sees your freight) the chances are that you will be penalized by paying excess freight charges.

Assign Higher Rate

Whenever the rate clerk is in doubt, the higher freight rate is generally assessed. The federal government, the country's largest shipper, has many friends among rate clerks, because its shipments are described "word for word" with the freight classifications. This is also true of many other large shippers.

Since the rate clerk does not see your freight, the only information he has is what is written on the shipping order. These examples show how

What's Behind the Growing Interest In Air Freight?

The methods that industry has developed to overcome long distance freight charges such as warehouses, emergency stocks, special trucks are in many cases becoming obsolete. A manufacturer of electronic parts, for instance, has found that he can ship to a customer in New York by air from Chicago as fast as he can make delivery to the same customer by truck from a New York warehouse. The cost of freight is higher, of course, but warehousing, extra handling, inventory costs, etc. have been eliminated.

Similarly, military groups are growing increasingly aware that they cannot afford to stock huge quantities of parts all over the world because of obsolescence. The answer is to stock less and ship faster—via air.

Packaging for air costs less than it does for surface shipment. Packaging requirements depend on how much handling the product will get and the transit time involved in reaching its destination. Both are materially reduced by air freight. This means that two cost items are cut—the cost of the packaging itself, and the freight charges paid on the packing material. Most products can be shipped in cartons. A motor manufacturer has discovered he can ship his products by air with no packing at all.

Before a purchasing agent spends any money for additional warehouse or storage space, he should look at the chances of cutting inventory by using air cargo. Construction costs could well make increased freight charges seem puny.

When rates come down the advantages of air freight will be hard to ignore. There is increasing talk among carriers of 30 to 50% rate reductions in the next few years. But they won't come automatically. The carriers will have to correct a number of problems before reductions of this size become possible. There is



evidence, however, that carriers are seriously considering:

- Better equipment: new, and larger, planes.
- New concepts of pricing.
 Improved ground handling
- Improved ground handling.
 Faster paper work.

In a recent study, Stanley H. Brewer, professor of traffic at the University of Washington, concluded that aircraft shortages have held back adequate development of air cargo for 15 years. Now, as the airlines are replacing piston-engine planes with jets, they are beginning to overcome this shortage.

classification ratings vary with the completeness of the shipping order description.

If you ship	And describe them as	They will be rated	They should be rated
Cotton work shirts	Cotton	Class 100	Class 77½
Crude sul- phate of soda	Chemicals	Class 100	Class 50
Wooden forks or spoons	Woodenware	Class 100	Class50
Portable phonographs	Phonographs	Class 125	Class 110
Solid toy blocks	Toy blocks	Class 85	Class 70
Cotter pins, iron or steel	Hardware	Class 70	Class 50

Here is a specific instance of the value of a correct and complete description. Take the com-

modity "Garment Hangers" (This information comes from the National Motor Freight Classification):

on):		
Hangers, garment, aluminum, aluminum alloy, magnesium metal, or magnesium metal alloy, NOI, in boxes	Class	100
Hangers, garment, plastic or plastic		200
and metal combined, in boxes	Class	100
Hangers, garment, NOI, in barrels,		
boxes or crates	Class	100
Hangers, skirt or trouser, cast alu-		
minum, in boxes	Class	85
Hangers, garment, wire, or wire and paper combined, in barrels, boxes or crates	Class	70
Hangers, garment, wood or wood and wire combined, in barrels, boxes,		
or crates	Class	70
Hangers, garment, pulpboard, print- ed or not printed, in barrels, boxes,		
or crates	Class	55
(Please turn to page 168)		



The ABC's of EOQ

A straightforward explanation of how economic order quantity techniques can be used to put inventory control on a scientific basis.

By Leo A. Guthart

ONE OF THE more striking recent management trends has been industry's effort to put inventory control on a scientific basis. Management has finally realized that it's just too expensive to handle inventories on a hunch basis.

Among the simpler, more practical inventory control techniques that have gained favor is the economic order quantity approach. Purpose of this article is to give P.A.'s who may not be familiar with this technique the basic facts they need to set up an E.O.Q. system of their own.

The theory behind the economic order quantity formula is very simple. It is based on the assumption that two factors must be considered when determining the amount of a repetitive use item that should be ordered at one time. These factors are:

(1) The cost of carrying inventory.

(2) The cost of writing a purchase order.

They are related in a very simple way. Larger order quantities mean larger average inventory investment. This means higher inventory carrying costs. It also means, however, fewer purchase orders, and as a result, lower purchase costs.

Conversely, smaller order quantities mean decreased inventory costs and increased purchase costs.

Mr. Guthart is a graduate student at the Harvard University Graduate School of Business Administration. He was recently elected a George F. Baker Scholar, and at present is engaged in outside consulting work in addition to his studies.

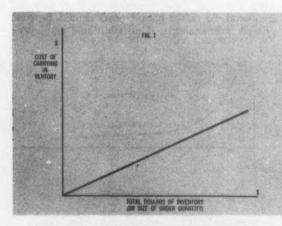


The economic order formula is nothing more than a mathematical way to determine how much should be ordered to minimize the total of these two inversely varying components of cost. Therefore, unless your present order quantities are already exactly right, you will find that switching to economic ordering will either reduce your inventory costs without increasing your purchasing costs or reduce your purchasing costs without in-

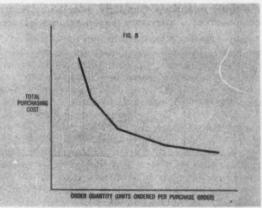
creasing your inventory carrying costs.

Inventory carrying cost (which includes costs of capital, warehousing, handling, obsolescence and miscellaneous charges) is expressed as a percentage of total dollar inventory and therefore is assumed to vary directly with inventory investment (or size of ordering quantity—see Figs. I, II, III).

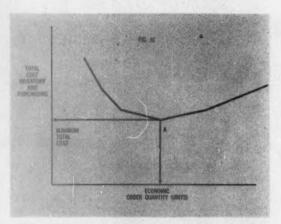
At this point, a refinement should be made. It



Purchasing cost is expressed in terms of total dollar expenditure for the year and declines as order quantity increases (See Fig. II).



Total inventory and purchasing cost, then, for various order quantities is represented as the sum of the purchase cost curve and the inventory cost line (See Fig. III).



Point A indicates the quantity, Q, that should be ordered to achieve the minimum total of inventory carrying and purchasing costs.

must be pointed out that the economic order formula gives the order quantity that will result in the min mum total of only those components of inventory and purchasing cost that actually vary with changed order quantities.

Specifically, the formula does not take into account:

(1) Carrying charges on minimum stocks.

(2) Purchasing costs other than the direct cost of preparing purchase orders.

For example, total inventory carrying cost is composed of charges incurred on two components of inventory: safety or minimum stocks which tend to remain fairly constant; current stocks which are continually used and replenished (See Fig. IV).

A change in order quantities will have no effect on minimum stock levels or minimum stock carrying charges. It will, however, have a direct effect on average current stocks. For this reason, the inventory carrying cost considered by the economic order formula refers only to that component of total inventory cost resulting from average current stocks and which can be changed by varying the order quantities. Similarly, purchasing cost is composed of supervisory expenses, special contract expenses, and purchase order preparation expense—(see Fig. V).

Again, the only component of purchasing cost that can be affected by a change in order quantity is purchase order preparation expense. As a result, it is the only component considered by the formula.

This limitation does not in any way destroy the validity or usefulness of the formula. It does mean, however, that references to total cost of inventory and purchasing actually concern those components of inventory and purchasing cost that can be affected by changed order quantities. These components are (1) carrying charges on current stocks and (2) direct purchase order preparation expense.

The economic order quantity is represented by the following expression:

$$EOQ = \sqrt{\frac{2RP}{CK}}$$

where EOQ = economic order quantity

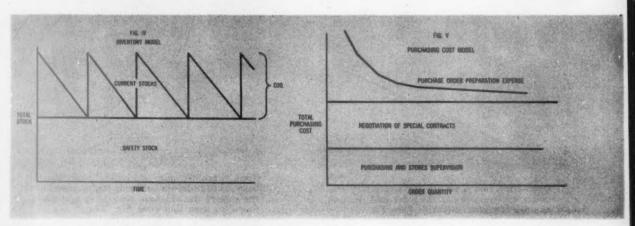
R = year's usage

P = cost of preparing a purchase order
C = dollar value per unit of inventory
K = inventory carrying cost (%)

To apply the E.O.Q. theory to an actual inventory situation, economic order quantities must be calculated for each item in stock. (The actual mechanics of calculating the quantities are very simple and should pose no problem at all). In order to do this, R (annual usage), C (stock item dollar value), P (cost of preparing a purchase order) and K (cost of carrying inventory as a percentage of total dollar inventory) must be determined. Of these, C and R must be determined for each item.

This is usually fairly simple to do since most firms calculate average usage per stock item and unit cost as part of their regular inventory control procedures. P, the cost of preparing a purchase order, and K, the cost of carrying inventory as a percentage of total dollar inventory, are constants which should be used for all stock items. It will be necessary to analyze your costs in deriving them.

The single most important thing to remember when deriving these constants is that only incremental, or out-of-pocket costs should be considered. For example, if no additional employees



are needed to process additional purchase orders, the only cost component that should be considered is the printing and paper expense of the additional forms. If no additional warehouse space is required to order in larger quantities, warehouse rent should not be included in the cost of carrying in-

ventory (K).

One company that recently installed economic order quantities felt that the only cost components that should be included in its inventory carrying cost for the E.O.Q. formula were cost of money charges and local property taxes. Warehouse rent, warehouse labor, and risk of obsolescence were all felt to be fixed for changes in inventory levels resulting from changed order quantities. By the same token, although this firm calculated its total average cost of preparing a purchase order at \$7.56 (not relevant for calculating EOQ), it arrived at an incremental cost of preparing additional purchase orders of only \$2.10.

The following example explains incremental cost approach for determining these constants:

Suppose storeroom X costs \$2000 per month rent and normally stores about \$2 million of inventory. The decision is made to add \$500,000 to inventories and the management of company X wishes to know what this will cost in rent. An advocate of average, or full costing, will claim that the additional inventory will cost \$500 per month rent. He will reason that since storeroom rental has averaged .1¢ per \$1 of inventory (\$2000 rent/\$2,000,000 inventory), an increase of \$500,000 in stores will cost \$500.

The incremental cost advocate will examine the situation more closely and will show that rent for the additional inventory will cost the company nothing. He will reason that rental payments are fixed at \$2000 per month and that the additional inventory will just be using a greater percentage of the already existing space. He will show that, so long as new warehouse space is not needed, rental payments will still be \$2000 per month.

At company X, incremental inventory carrying cost was 11.5% and the incremental cost of preparing a purchase order was \$2.10. For an item, then, with annual usage of 1000 units and a unit cost of \$10, the economic order quantity is 60

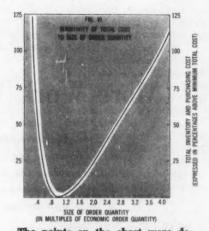
$$EOQ = \sqrt{\frac{2RP}{CK}} = \sqrt{\frac{2 \times 1000 \times 2.10}{10 \times .115}}$$

= 60 units

For an item with annual usage of 5000 units and unit cost of \$1, the EOQ is:

EOQ =
$$\sqrt{\frac{2RP}{CK}}$$
 $\sqrt{\frac{2 \times 5000 \times 2.10}{1 \times .115}} = 430$ units

Before going to the expense of calculating economic order quantities, an attempt should be made to estimate how much can be saved by using economic order quantities. Fig. VI shows the percentage of minimum total inventory and purchasing cost that will be incurred for orders placed in



The points on the chart were derived from the following formula: Total Cost with Normal Order Quantities/Total Cost with Economic Order Quantities = $n^2 + 1/2n$ where n = multiple of economic

quantity normally used

Total Cost = QCK/2 + RP/Q

various multiples of the economic order quantity. For example, if orders are being placed in quantities which are generally double the EOQ's, combined inventory and purchasing cost (actually cost of carrying current stocks and cost of preparing purchase orders) is 25% greater than it would be if economic quantities were used. Obviously economic ordering can bring significant savings.

The economic order quantity formula does not take account of the fact that changed order quantities may alter quantity discounts. Since most repetitive-use inventory orders are placed on blanket contracts where total requirements determine quantity discounts, this will not pose too great a problem. On items where quantity discounts do change with individual order size, however, it will be necessary to calculate the total actual cost of inventorying current stocks and preparing purchase orders for the economic order quantity as well as for the quantity necessary to realize the discount.

The additional cost of ordering the larger quantity should be compared with the total discount that can be earned during the year and an objective evaluation made of whether economic order quantity or discount order quantity is more advantageous. If the difference between the total costs of inventorying current stocks and preparing purchase orders for the economic order quantity and the discount order quantity is less than the total discount that can be earned, it will be advantageous to replace the economic order quantity with the quantity necessary to earn the discount. On the other hand, if the difference in total cost between economic order quantity and discount order quantity is greater than the total discount that can be earned, the economic order quantity should be used. The same reasoning applies when freight rates differ with order quantity.

More Work With Fewer People

Improved ordering methods have helped Abbott Laboratories handle a big increase in purchasing volume without expanding the department. Emphasis is on cutting down buyers' clerical work and improving the quality of their purchasing.

PURCHASING volume at Abbott Laboratories, North Chicago, Ill., is up by about \$5 million a year since 1954. Yet there are fewer people in the department now than there were then. And purchasing is writing only 100 orders or less a day, as compared to 125 a day in 1954.

Statistically, the record is impressive. But Director of Purchases Glenn Reinier isn't interested in playing the numbers game to show how purchasing performance has improved. "It's true that we had 35 people in the department in 1954, and that we have only 31 now," he says. "But the point is that the quality of our buying has improved. We have 11 buyers now as against 7 then. But only 8 of our people are doing clerical work, instead of 20. We have been able to put the emphasis on good buying instead of on detail."

Get Rid of Records

Reinier's program is simple: eliminate unnecessary record keeping; keep buyers away from paperwork as much as possible; relieve buyers of most of the expediting; give buyers a chance to get into more productive areas such as standardization, supplier evaluation, and economic studies.

Since 45% of all Abbott's purchases cost \$50 or less, it's natural that special attention has been given to purchase order paperwork. One successful effort has already been described ("No More Office Supplies to Buy," Purchasing Magazine, p. 76, Oct. 12, 1959). Two other parts of the pro-

gram have been equally effective: telephone ordering on low-cost items, and blanket ordering on M.R.O. supplies.

The Telephone Order

Abbott purchasing now uses a telephone order for small orders of expense items. Orders can be prepared by buyers' assistants as soon as requisitions are received. The assistant prepares a four part form (see illustration) and calls the vendor to give him an order number, description, and delivery information. The vendor does not get a copy of the order.

The savings in paper alone are substantial. The new form is only two-thirds the length and contains less than half the number of copies as the 9-part order formerly used. Administrative work is

also sharply cut; buying decisions are made by the assistant, who promptly writes the order by hand and distributes the four copies. Buyers are thus relieved of the details of an elaborate procedure. Best of all, the costs of handling involved orders for small value items are no longer apt to run higher than the cost of the item.

Cut Paperwork

Abbott dealt a double blow to excess paperwork with a traveling requisition-blanket-order system for M.R.O. supplies. Initially, M.R.O. items were put on traveling requisitions, which were maintained in purchasing. The first move was to work out an arrangement with the shop to store the cards there—since it was logical to keep the purchase record at the



Director of Purchases Glenn Reinier: "Buyers should buy, not act as Information Please experts."

requisitioning source. The next move was to put as many M.R.O. supplies as possible on blanket orders. Now the shop simply pulls the cards as supplies are needed, and issues a release against the blanket order.

Although the arrangement sounds simple, a good deal of thought and preparation went into setting it up. Interested shop people were in on all purchasing's deliberations as to what items

would be put on blanket orders. what suppliers would get the orders, etc. Suggested order quantities were established on the basis of historical usage.

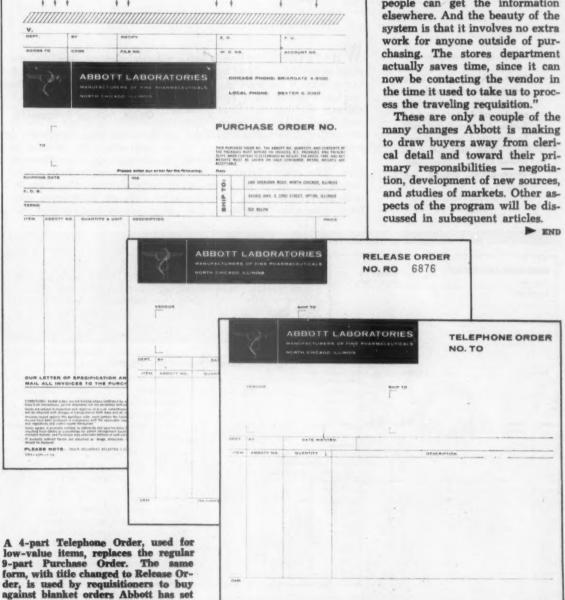
Audit Blanket Orders

Under the new system, purchasing receives a copy of each release then runs off a monthly total to see that allocation of business is going as planned. About once a vear buyers will audit blanket

orders set up on their commodities-checking prices, market conditions, order quantities, etc. Since about 28 items are bought on blanket orders-mostly from local suppliers—that means about two contracts a month are audited.

Requisitioners who need information now go directly to their own records.

"Buyers were ending up as Information Please experts," says Reinier, "just because we had records. We got a cash discount from somebody five years agowho is it, we'd be asked. Now people can get the information ess the traveling requisition.



up on many maintenance supplies.



This article is one of a series illustrating and explaining the use of various purchasing department forms. All forms that will be described in this series have been selected from representative purchasing organizations around the country.

What's OMITTED from a purchase order set can be as interesting as what is included. At Chiksan Co., a subsidiary of Food Machinery & Chemical Corp., the traditional acknowledgment and accounting department copies are intentionally left out.

Purchasing Agent E. H. Nelson says, "The acknowledgment copy entails more effort in follow-up than its value warrants. When we issue orders that might require acknowledgment we include a covering letter which allows us to emphasize certain terms and conditions of the contract."

Quick Invoice Processing

The accounting department gets its copy after the material is in the plant. Since no purchase order is ever mailed without complete price and terms, this copy is the first and only information about a buy that accounting gets. It can

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FACER SHEET—This form is used by the buyer when preparing purchase order information. The block of numbers in the lower left hand corner corresponds to 30 different requirements or specifications. Instead of writing out detailed specifications, all the buyer has to do is to circle the appropriate numbers.

immediately process invoices after it receives this copy.

The Brea, Calif., plant of Chiksan Co. operates with standard cost and departmental budget control systems. Each department head requisitions every-day supplies and services. For repeat expendable items a traveling requisition is used.

When a requisition arrives in the purchasing department the first form to be filled out is the "Facer Sheet For Purchase Order," which was designed to match the actual purchase order. In addition to the normal information which appears on the customer's copy there is, in the lower left hand corner of the facer sheet, a block of numbers from 1 to 30. Each of these numbers refers to a buying specification. The buyer. by circling appropriate numbers. can apply specifications without writing them out in detail.

The facer sheet, along with the requisition, then goes to a typist. The purchase order is a one-time carbon, snap-out set and includes an original, a transparency and three additional copies.

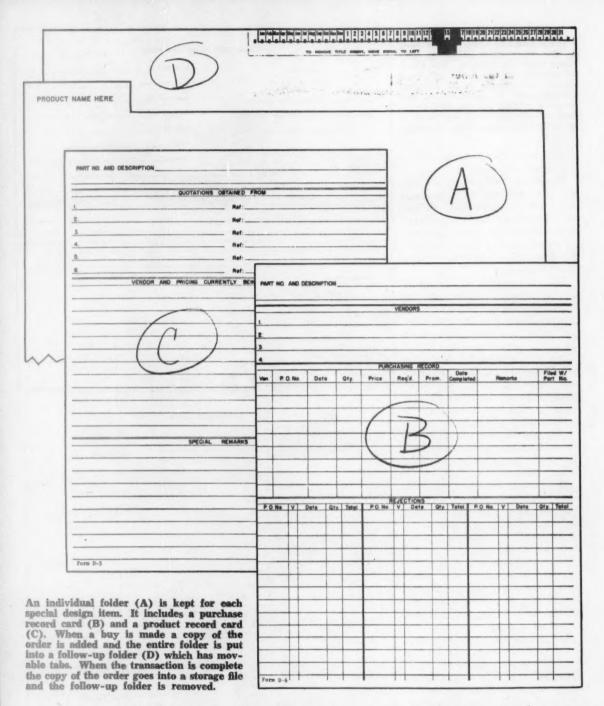
The transparency is sent to the receiving department. The other three copies are for purchasing department records, the requisitioning department, and advance statistical data.

The transparency copy has space for a possible 16 entries by the receiving department. After each shipment has been noted, three copies of the transparency are reproduced and are sent to the purchasing department.

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PURCHASE ORDER—One copy of the purchase order is a transparency. It is exactly like purchasing's copy except that it contains space for 16 entries by the receiving department to record partial shipments. After receiving notes the shipment information, three copies are reproduced and sent to purchasing for checking.

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Purchasing spot checks the entire transaction. It retains one copy for recordkeeping, the second is forwarded for posting to inventory records, and the third is stamped "Accounting Department" and forwarded to the accounts payable section for payment upon receipt of the invoice.

An individual folder is maintained for each Chiksan design item (no purchase history is kept of standard purchased parts). It contains a copy of any open order, a purchase record card and a product record card.

Put in Storage File

At the time the open order information is filed, the folder is inserted in a special follow-up folder with movable tabs to indicate the day and month when first follow-up action should occur. When a purchase transaction is completed, information about it is noted on the purchase order record card. The copy of the purchase order is pulled and filed in a completed storage file. The follow-up folder is removed from around the product record file and the cycle has been completed END

How the Court Views Tie-In Sales

In cases where a seller uses patented items to foster the sale of other goods by tie-in contracts, he runs the risk of losing legal support if there is an infringement of his patent.

By Albert Woodruff Gray, Legal Editor

Sult was recently brought in a federal court in Pennsylvania for the infringement of a patent of a gage used to measure strain in electrical conductive materials.

The gage had been marketed for use with oil field tools and equipment, airplanes and internal combustion engines and for testing fabrics. As a condition of sale, the seller had required that the purchaser buy from him all or substantially all of the gages he required, as well as associated devices with which they would be used.

Contracts Made

Contracts made with aircraft companies contained a licensing agreement by which the purchasers were permitted to manufacture 10 per cent of their annual requirements. The remaining 90 per cent was to be purchased from the seller and owner of the patent.

In applying section 3 of the Clayton Act to these agreements, the federal court said, "It appears that the contracts are for the sale of goods, that the obligation to buy exclusively from the patentee is tantamount to an agreement not to use or deal in the goods of a competitor or competitors of the patentee."

This section of the Clayton Act reads in part, "It shall be unlawful for any person engaged in commerce, in the course of such commerce, to lease or make a sale or contract for sale of goods, whether patented or unpatented, for use, consumption or resale within the United States on the

condition, agreement or understanding that the lessee or purchaser thereof shall not use or deal in the goods of a competitor or competitors of the lessor or seller, where the effect . . . may be to substantially lessen competition or tend to create a monopoly in any line of commerce."

In its conclusion that patent infringement had taken place, the court said, "By thus conditioning the right to use these gages as a permanent element solely with equipment purchased from the seller or its licensees, the seller has used the monopoly of the patent to further the sale of apparatus with which the gages can be used.

"The patent was issued as an award to the inventor for disclos-

ing his strain gage discovery to the public. The monopoly which he received from the Patent Office for this disclosure was the full recompense which the patent laws contemplated he should have.

Reducing Competition

"The seller has however, utilized the patent so as to obtain a benefit beyond the purview of the patent statute. By its marketing policy of the gages the seller has been able to reduce or eliminate the competition which it and its licensees might otherwise have encountered in selling devices such as load cells and weight indicators not covered by the patent.

"The manner in which the sell-



The court has ruled that it is illegal to sell goods with the condition that the purchaser "shall not deal in the goods of a competitor . . . of the seller, where the effect . . . may be to substantially lessen competition. . ."

er has tied the use of the gage to the use of apparatus not covered by the patent, sold by it and by its licensees, constituted a misuse of the patent. That misuse bars the enforcements of the patent regardless of whether the 'tying' practice resulted in a violation of the antitrust laws."

Another Federal court said: "This section (Clayton Act, Section 3) strikes at practices relied on to limit competition in the distribution of goods which restrict the right to deal in competing products.

"Among these are the so-called 'exclusive dealing arrangement' and the 'tying contract.' The former involves the condition that the purchaser or lessee of goods shall deal only in the goods of the seller or lessee and refrain from dealing in the goods of a competitor.

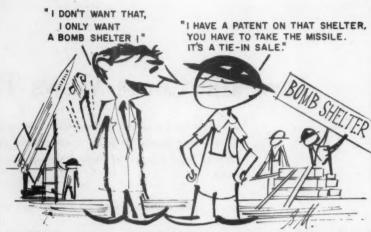
Two Essentials

"The latter involves a condition that the goods sold or leased shall be used only with other goods of the seller or lessee, the purchaser or lessee agreeing not to deal in such other goods of competitors, or the leasing of equipment on the condition that it shall be used only with supplies of the lessor. Where the effect of such arrangement may be to substantially lessen competition or tend to create a monopoly, they are unlawful.

"It will be seen that a tying contract has two very definite essentials: (1) That goods sold or leased by the seller should be used only with other goods of the seller or lessor; and, (2) that the purchaser or lessee agrees that he will not deal in such other goods of a competitor."

To this the court added a recent comment made by an Attorney Generals National Committee on the operation of this statute, "The element common to all practices reached by the statute was exclusion of rival sales—either by the terms of the arrangement or its necessary effects."

Another incident that came before the United States Supreme Court, arose from the sale of a patented machine for dispensing salt tablets in conjunction with the sale of the tablets themselves.



Impossible consequences could result if tie-in sales were permitted by law. "Private business would function as its own patent office and impose its own law upon licensees."

A suit for the infringement of the patent of this device had been dismissed on the ground that the tie-in sale had forfeited the right of the seller to the protection of the patent.

The Supreme Court sustained this disposition of the case. "A patent operates to create a grant to the patentee, an exclusive right to make, use and vend the particular device described and claimed in the patent. But a patent affords no immunity for a monopoly not within the grant, and the use of it to suppress competition in the sale of an unpatented article may deprive the patentee of the aid of the court to restrain the alleged infringement by one who is a competitor."

Another incident of this sort, occurring only two years later, also came before this court. That decision has since become an outstanding authority for the later condemnation of sales contracts carrying such reservations.

Here the action had been brought for the infringement of a combination patent of a motor driven furnace stoker and a thermostat control. Use of these items required the purchase of a stoker switch. When the infringement suit was brought by the patentee the defense was that the patent had been implemented with a violation of the antitrust laws and was consequently unenforceable.

"The instant case is a graphic illustration of the evils of an ex-

pansion of the patent monopoly by private engagements," said the court in holding the patentee without remedy for infringement.

"The patent in question embraces furnace assemblies which neither the patentee nor the licensee makes or sells. The struggle is not over a combination patent and the right to make or sell it. The contest is solely over unpatented wares which go into the patented product.

"But the fact remains that the competition which is sought to be controlled is not competition in the sale of the patented assembly but merely competition in the sale of unpatented controls. The patent is employed to protect the market for a device on which no patent has been granted.

Lawful Restraint

"But for the patent such restraint on trade would plainly run afoul of the antitrust laws. If the restraint is lawful because of the patent, the patent will have been expanded by the contract. That on which no patent could be obtained would be as effectively protected as if a patent had been issued.

"Private business would function as its own patent office and impose its own law upon its licensees. It would obtain by contract what letters patent alone may grant. Such a vast power to multiply monopolies at the will of the patentee would carve out

(Please turn to page 165)

How does ESNA's <u>complete</u> line turn your special hex nut requirements into standard parts?





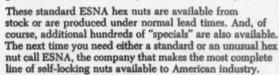






What happens when design or production requires a variation on a standard self-locking hex nut? Can you find a source quickly and economically? You can if you call on ESNA, because ESNA's standard line of hexagon nuts includes hundreds of dimensional, material and tensile variations. Probabilities are that one of them will meet your requirements.

Every nut illustrated here is a standard part. They range in size from a sub-miniature 0-80 thread that is only .107" across the flats to a 4"-4 thread that is 61%" across. Thread series include SAE, USS and British BSF, BA and Whitworth series. Most are available in carbon steel, stainless, brass, and aluminum. The locking effectiveness of the red locking collar of an Elastic Stop nut has been tested and proved by more than thirty years of actual field service on locomotives, pile drivers, oil drilling machinery and washing machines, truck and tractors. Elastic Stop nuts do not gall or seize bolt threads; they can be re-used many times.



For details on the Elastic Stop® nuts shown here, write Dept. N43-615.









ELASTIC STOP NUT CORPORATION OF AMERICA

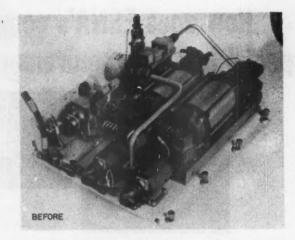
2330 Vauxhall Road Union, New Jersey



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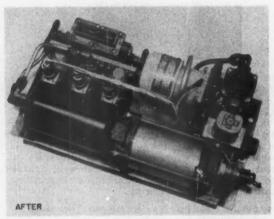
Products and Ideas

How Value Analysis Gets Results In Electronics

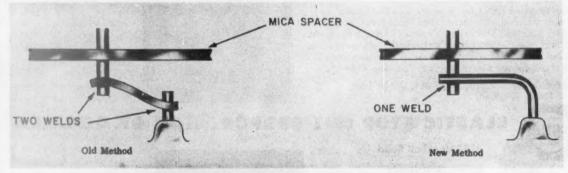


THE CASE HISTORIES on these pages illustrate the many ways in which value analysis is making substantial savings for the Raytheon Company, Waltham, Mass. Electronic units used for exclusively military purposes are represented as well as high-production commercial components.

These examples show at least four different approaches to value analysis: simplification of design, change in design, use of new processes, and developing specialty vendors. By maintaining a flexible attitude, in order to see which technique is best suited to the problem at hand, the value analysts at Raytheon are able to come up with consistently worthwhile results.



VENDOR CUTS COST IN HALF. A unit to dehydrate air and pressurize electronic equipment, was large, had 129 separate parts, and was expensive. The company asked vendors specializing in dehydrating equipment to submit their own designs based on operational specifications. The accepted unit — one complete assembly—was less complicated and smaller than the original, and had double the moisture removal capacity. It was also interchangeable with the original and cost 55% less.



SIMPLIFICATION INCREASES RELIABILITY. A study of the construction of a BQ7 power tube revealed that two ribbon connectors were welded between the stem leads and tube elements. By bending the stem leads and welding directly to the tube elements, the tedious assembly of two small parts was eliminated and \$11,000 annually was saved. Half the number of welds means less chance of weld failure and improved reliability.



TWO PARTS BECOME ONE. Analysis of a magnetron power tube showed that a two-part magnet and aluminum covering could be made in one piece with a single cast aluminum cover. This eliminated one casting operation, assembly and associated hardware. Furthermore, grinding the two magnet faces to assure a close fit and minimize losses was automatically cut out. The design change resulted in a 30% savings.







SECOND LOOK PAYS. Raytheon had to insulate two surfaces of a power tube. Before the value analysts came in, the cost was \$13.50 for an assembly that consisted of a glass tube metallized and soldered to two metal flanges. After serious study, one of the value engineers found out that it was possible to buy a molded glass insulator for \$6.50. But he didn't stop there. He decided to look further into the possibility of even greater cost savings. He was finally able to come up with another saving by changing to an injection molded nylon insulator which cost only \$1.25. Thus by taking another look at a project that had already been analyzed, value engineering was able to make a really substantial saving through the use of a new process. Even though a small saving had been made on the first attempt, it was really the second look by creative value analysts that made the important saving for Raytheon.





There's a BIG difference in floor absorbents

MAKE THIS DISCOVERY!

RIGHT IN YOUR OWN OFFICE you can test the difference of Eagle-Picher Industrial Floor-Dry with whatever oil absorbent you're now using. You'll discover it actually absorbs as much as 100% or more liquid per pound than other floor drying materials.

YOU'LL ALSO PROVE that Eagle-Picher Floor-Dry retains its skid-proof granular mineral form even when saturated. It doesn't mud or pack. Light in weight, it spreads easier and covers a larger area. Non-combustible, it has no chemical reaction. And possessing unusual reflective power, Floor-Dry makes working conditions bright and pleasant, as well as safe!

Since 1843



WRITE TODAY. Our Eagle-Picher representative will bring the portable laboratory to your office where you may make this test yourself. The Eagle-Picher Company Dept. P-66, Cincinnati 1, Ohio.



For More Information Write No. 205 on Place Mark Card-Page 32

Products

Tractor with Remote Radio Control



A tractor with remote radio control brings ease, speed, and economy to order-picking operations. Operator or order-selector can remain in one spot, select orders quickly and operate easy, fully transistorized radio control system to move tractor only when necessary. He can also walk or ride the tractor without employing remote control apparatus. Miniature transmitter can be held in hand, slipped into pocket or clipped to user's belt and has range of approximately 100 ft. **Automatic Transportation Co., 149** W. 87th St., Chicago, Ill. Write No. 18 on Place Mark Card-Page 32

Hand Grinder with Higher Working Speed



A hand grinder featuring "balanced power" offers a higher, full-load working speed. Motor design reduces no-load speed for longer bearing life and increases full-load speed for maximum production and faster metal removal with carbide burrs or mounted wheels. Specifications include rating, ¼ HP (continuous duty); no-load speed, 35,000 rpm; length, 10 in.; weight 3¾ lbs.; collets, ¼ and ½ in. Dumore Co., 1300-17th St., Racine, Wisc.

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PURCHASING





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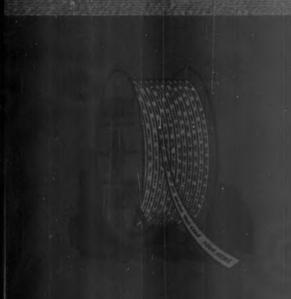
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Products

3-Phase, Squirrel-Cage Induction Motors



A line of 3-phase, squirrel-cage induction motors has been expanded to include sizes from 1/2 to 125 HP. Specially compounded thermo-setting plastic is used to encapsulate and impregnate the stator. All-welded steel frame and end bell give rugged, trouble-free operation. Sealed stator, bearings and conduit box operate impervious to water, oil, abrasive material and other contaminants. Design gives equivalent of totally enclosed performance in standard open type frame. Lincoln Electric Co., Cleveland 17, Ohio.

Write No. 20 on Place Mark Card-Page 32

Rugged Vane Type Spark Arrestor



A rugged vane type spark arrestor is adaptable to both mobile and stationary internal combustion engines. Unit employs centrifugal action principle without the use of moving parts to drive the heavy particles of hot carbon into spark trap. Standard models come in four sizes of aluminized steel with cast ductile iron vane, to fit engines from 150 to 1200 cu. in. displacement. Air-Maze Corp., 25000 Mile Rd., Cleveland 28, Ohio.

Write No. 21 on Place Mark Card—Page 32 JUNE 6, 1960



WHO FORGES THE TOUGH ONES? and dynamic balances them, too?

To further National Forge's reputation for producing precise forgings, we've installed one of the largest, most accurate dynamic balancing machines in use. Our American-Trebel has a 33,000-pound, 60-foot capacity.

Pictured on the machine is a 42 ft. propeller shaft that has been forged, machined, and hollow bored—all operations done in our National Forge plant—NF specialists are shown balancing this gigantic 15,500 lb. shaft.

If you want one responsible source to produce and control the quality of your forgings . . . from melting and forging the steel through machining and dynamic balancing . . . call National Forge. Let us quote on your next job—and prove "who forges and dynamic balances the tough ones . . . best!" For information on the "tough" ones and the machinery that makes them best, write for Bulletin NF 1.



NATIONAL FORGE COMPANY

Irvine, Warren County, Pa.

NF-59-04 B

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EVERY TIME YOU BUY THIS BRUSH... YOUR OWN GOOD JUDGEMENT

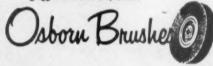
Today's industrial buyer is a special kind of expert. His job: spot and buy genuine value down the line—big purchase or small. And when it comes to brushes—both the men who buy and the men who use them agree on Osborn.

 The right Osborn Power Brushes, for instance, help you do cleaning, finishing or deburring jobs better, faster ... at less cost.

So to save buying time . . . to cut buying costs . . . to get built-in value automatically everytime—make Osborn your brand for all industrial brushes. Choose from a complete line of superior:

- · Power brushes
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Full details in the new Osborn 112-page Catalog. Write for your free copy. The Osborn Manufacturing Company, Dept. U-58 Cleveland 14, Ohio.



OSBORN

METAL FINISHING MACHINES ... AND FINISHING METHODS
POWER, PAINT AND MAINTENANCE BRUSHES . FOUNDRY PRODUCTION MACHINERY

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Products

Limit Switch Line Really Oil-Tight



Limit switches for application on high-speed, precision production machines are truly oil-tight. They are ideal for installations where high impacts and adverse environmental conditions play a major part in switch failure. Internal and external seals positively prevent seepage of oil, coolants, moisture and abrasive grit. Use of thermoplastic material allows contacts to be enclosed but visible. Surface type and flush type mountings, and 14 different operating heads. Cutler-Hammer, 564 N. 12th St., Milwaukee, Wisc.

Write No. 22 on Place Mark Card-Page 32

Heat-Sealed Multi-Wall Bag



A multiwall bag provides an effective, economical solution to the problem of packaging hygroscopic, deliquescent, corrosive, semi-liquid or other hard-to-protect products. Designed to hold (Please turn to page 100)

ANNOUNCING

G-E Man-Made Diamonds

for metal bonded grinding wheels

Now available . . . a new General Electric Man-Made diamond crystal for metal-bond application.

Extensive laboratory tests and field evaluation of the new General Electric MBG diamond demonstrate performance advantages which are certain to benefit you in your own plant. This new Man-Made diamond type was developed specifically for metal-bonded grinding.

The addition of the new MBG crystals (for metal bonding) to the RVG grade (for resinoid and vitrified bonding) means that your wheel supplier can now furnish wheels containing G-E Man-Made diamonds in all three bonds.

Test this new Man-Made diamond in a metal-bond wheel in your own plant. Learn first hand how the superior qualities of these crystals can improve your production picture. Contact your diamond wheel supplier. Metallurgical Products Department of General Electric Company, 11148 E. 8 Mile Avenue, Detroit 32, Michigan.

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CARBOLOY® CEMENTED CARBIDES . MAN-MADE DIAMONDS . MAGNETIC MATERIALS . THERMISTORS . THYRITE® . VACUUM-MELTED ALLOYS

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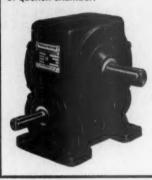




REDUCERS

on their Roller Hearth Furnaces

Lindberg Roller Hearth Solution Treating Furnace, showing some of the 101 Winsmith Model 2CB Reducers which drive the rolls. An additional Model 7CT is also installed. The heating chamber of this furnace is 100 feet long with 40 feet of quench chamber.



LINDBERG ENGINEERING COMPANY of Chicago is a leading manufacturer of heat treating furnaces. When they designed this one to handle 4,000 lbs. of aluminum extrusions per hour, specifications called for 101 speed reducers to drive the rollers. They selected Winsmith for compact Size, rating and their record of past performance. Lindberg is a long-time Winsmith customer. They describe the relationship this way..."We have used Winsmith Reducers for many years and have found their reliability and ruggedness ideal for use with our heat treating furnaces." Lindberg Engineering is another one of the leading American

manufacturers who specify Winsmith Speed Reducers for most applications from 1/100 to 85 hp.—in ratios from 1.1:1 through 50,000:1.

WRITE TODAY for complete selection information and engineering data. You'll see for yourself why it pays to standardize on Winsmith.

WINSMITH, INC.

18 Sixth Street, Springville, (Erie County), N. Y.

For More Information Write No. 210 on Place Mark Card-Page 32

Products

(Continued from page 98)

up to 100 lbs. of bulk product, bag is constructed in form of a tube from two to six plies of paper. Inner ply is coated with polyethylene or other heat sealable materials. Depending on protection needed, plies are made up of various combinations of kraft paper, kraft and foil or polyethylene-coated kraft and foil. Outer plies are staggered or offset for direct and efficient heatsealing of inner ply by special closing machine. Union Bag-Camp Paper Corp., 233 Broad-way, New York 7, N.Y. Write No. 23 on Place Mark Card-Page 32

Batch Type Impregnation Machine



A batch type casting impregnation machine utilizes a "package design" concept and features a completely automatic impregnation cycle. Designed for use with metal oxide type sealants, unit is complete impregnation plant consisting of sealant supply tank (300 gals. working capacity), autoclave (225 gal. working capacity) and rinsing tank (300 gal. working capacity). All accessories and controls are located and safely mounted within basic machine dimensions. Shipped fully assembled, with stairway for floor mounting or without for pit installation. Prenco Mfg. Corp., 2605 W. 14 Mile Rd., Royal Oak,

Write No. 24 on Place Mark Card-Page 32

Hardware Converts Pallets to Racks

Pallet-racking hardware converts standard pallets into lowcost portable racks. Completely inter-changeable components can (Please turn to page 102)



POWER

That's what Interstate System places at your fingertips!

Pick up the phone and call Interstate—and you set into motion a transportation system that is unparalleled in the country. Over 4,000 skilled, highly-trained, wellequipped employees; more than 3,000 modern vehicles rolling from 78 terminals in 24 states. Distribution tariffs to cover multiple markets at a saving over LTL rates. And, direct, single-line LTL service, "time-tabled" to leave on time, arrive on time. That's the kind of shipping power that's available for your shipments. Call us

the next time you have freight to move within our authority. We're in the Yellow Pages, under "Motor Freight."

Services we offer regularly:

- Direct service to over 9,000 points.
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INTERSTATE SYSTEM

Grand Rapids 2, Michigan

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MORE THAN A TRUCK LINE ... A TRANSPORTATION SYSTEM

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JUNE 6, 1960

101

NORPLEX

SUPERIOR QUALITY industrial laminates

laminates are produced in accordance with standard N.E.M.A. specifications and MIL-P specifications. Many special grades including a variety of copper clad laminates for the manufacture of printed circuits are also available.

Northern Plastics Corporation produces over 60 standard grades to meet your requirements for flame retardancy, low power factor @ 60 cycles, arc resistance, cold punching, minimum odor, high insulation resistance and excellent mechanical properties.

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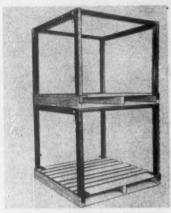


For More Information Write No. 212 on Place Mark Card-Page 32

Products

(Continued from page 100)

be quickly and securely assembled to any pallet without bolts, nuts or screws. Units can be safely stacked ceiling-high can accommodate loads up to 12,000 lbs. per stack, and can be handled



with all types of lift trucks and dollies. Racks can be compartmentalized to handle differentiated load by means of extra support bars. Quickly dissembled units store flat in minimum space. Sturdi-Bilt Material Handling Div., Union Asbestos & Rubber Co., 332 S. Michigan Ave., Chicago 4, Ill.

Write No. 25 on Place Mark Card—Page 32

Disc Grinding in Full View



A special fiber-backed abrasive disc permits the work-point to be in full view of operator as he grinds. Disc is produced with two parallel straight sides, resulting in a rectangular section with a radius at each end. As "disc" rotates, a full inch at outer edge where disc grinding is done be(Please turn to page 104)

For More Information about an on facing page
Write No. 213 on Place Mark Card—pg. 32->
PURCHASING

CABLE'BILITY

a new word for your vocabulary

Cable bility (cā'ble bil'i-ty) new word.

Noun. 1. Ability to design and manufacture electrical cables that give outstanding performance. 2. Having long background and wide experience in cable application. 3. Possessing keen understanding of customers problems. Implies eagerness to serve faithfully and dedication to progress. Syn. The Okonite Company.

Here is an Okonite shovel cable at work...rugged cable for a rugged job. Scraped. Twisted. Dragged over sharp rocks. Run over by trucks. But relentless in its job of supplying electrical power.

Okonite makes electrical cables for every industry... yours, too. Why not put Okonite cable'bility to work in your plant? It will help you cut costs, and will give you the satisfaction of having invested your company's money wisely.

The Okonite Company, Subsidiary of Kennecott Copper Corporation, Passaic, N. J.



where there's electrical power...there's OKONITE CABLE

7100

Products

(Continued from page 102)

comes visible, permitting faster grinding with reduced dwell time. In 7 in. and 9 in. sizes, surfaced with aluminum oxide abrasive in standard range of grit sizes. In use discs are supported by sisal-reinforced rubber back-up pads with diamond grid pattern to prevent slippage. Behr-Manning Co., Div. of Norton Co., Troy, N.Y.

Write No. 26 on Place Mark Card-Page 32

High Capacity, Efficiency with Spraywelder Unit



A lightweight, compact powder metal spraying unit offers a high spray rate (over 12 lb/hr) and up to 95% deposit efficiency. Basically, unit consists of pistol, hopper and control panel and operates using oxygen, acetylene and air. Controls have been simplified and spray pistol weight reduced 20%. Unit is easier to manipulate, tip changing is easier, and powder-storing capacity has been increased to 15 lbs. Wall Colmonoy Corp., 19345 John R. St., Detroit 3, Mich.

Write No. 27 on Place Mark Card-Page 32

Complete Line of Adjustable-Speed Drives

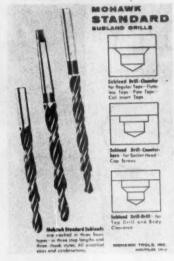


Economical, adjustable-speed AC drives of integral-unit construction are rated from 1/4 to 100 HP. Larger drives with sepa-

rate motor mounted on a bedplate are offered up to 700 HP liquid Electromagnetic drive can apply adjustable-speed power to conveyors, fans and pumps, winders and metal slitting and forming machines or almost anywhere speed control is needed. Drive can be set before or during operation, and built-in tachometer guarantees that it will remain adjusted. Control is exceptionally compact, and there are no brushes, commutators, or slip rings to maintain. Westinghouse Electric Corp., P.O. Box 2099, Pittsburgh 30, Pa.

Write No. 28 on Place Mark Card-Page 32

Complete Line of Subland Drills



A complete line of "standardized" subland drills includes the three basic operational types:
1) drill-chamfer, for regular taps, fluteless taps, pipe tap and coilinsert taps;
2) drill-counterbore, for socket-head cap screws;
3) drill-drill, for tap drill and body clearance on bolts, studs and screws. Drills have been developed in all practical sizes and combinations, in three step lengths and three shank styles. Mohawk Tools, Inc., 920 Main St., Montpelier, Ohio.

Write No. 29 on Place Mark Card—Page 32

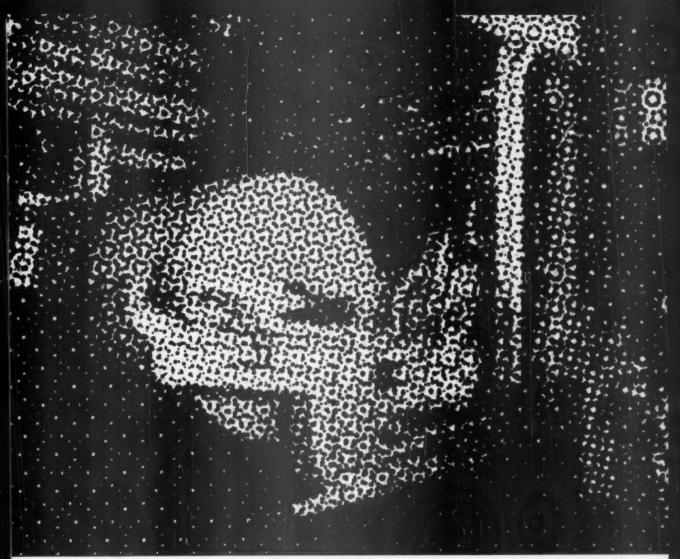
FOR PLACE MARK CARD TURN TO PAGE 32

Authorized Distributors

. for Crossett Leatherneck Wrapping Paper

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Parking Information Water Ma 214

For More Information Write No. 214 on Place Mark Card-Page 32



For a new perspective, look at this illustration from across the room.

Crossett Machine Time Plan-new perspective on purchasing paper



"For fourteen hours every month," one Crossett customer likes to say, "I own this paper mill." This is virtually what happens with each of Crossett Paper Mills' regular customers. Each has specific amounts of machine time reserved each month for his specific requirements.

The Crossett Machine Time Plan means that Crossett customers can count on getting paper precisely as and when ordered—and always at a fair price.

Crossett Leatherneck Wrapping Paper. Consistent quality in all weights, weight-controlled for customer savings.

Crossett Leatherneck Converting Kraft.
Custom-produced to the exact weight and quality needed.
Basis weight control assures predictable yardage per ton.
Crossett Technical Service available to customers.

Crossett Food Board. Cylinder machine production places long and short fibers precisely where needed for every packaging and printing requirement. Crossett Technical Service helps with customer problems.



A Division of The Crossett Company, Crossett, Arkansas, makers of paper, lumber, charcoal and chemicals. All from managed forests.

Products

Modular, Portable Strip Coil Racks



Modular, portable strip coil racks come in four standard size units for coils from 24 in. up to 42 in. diameters, with a capacity of up to 6000 lbs. Special units of unlimited capacities may also be designed for particular requirements. Racks are made of heavy gauge formed channel with square tubular steel corner posts, each capped with positive locking

nesting plugs for safe stacking. Open construction permits easy access and simplifies inventory control. 3 in. under-clearance permits fork-lift entry from all four sides. Jarke Mfg. Co., 6333 Harvard St., Chicago 48, Ill.

Write No. 30 on Place Mark Card—Page 32

Flat Rod Micrometer Depth Gage



A flat rod micrometer depth gage provides easier, more ac-

curate measuring. Gage allows measurements to be made at side of hole, avoiding extra depth made by drill point. Rod can be turned 360 degrees to any position. Once set, rod will not turn while measurement is being made. Other features include broader, heavier base, durable head, rapid reading, and hardened and ground threads. Lufkin Rule Co., Saginaw, Mich. Write No. 31 on Place Mark Cord—Page 32

Easy-to-Read Portable pH Meter



A big scale pH meter makes it simple to read values within (Please turn to page 110)



"Our plant area used to be what the legal profession calls an 'attractive nuisance.' Children and dogs had access to the grounds. And we had pilferage and traffic tangles to cope with too. The installation of Anchor Fence really solved our problems. Traffic now flows more smoothly, employee cars are protected, and of course the safety of children is no longer a headache. The Anchor men made numerous trips to the plant to be sure the job was tailor-made to our needs."

Call your local Anchor office today for a talk with one of Anchor's trained sales engineers. Write for free catalogue to: Anchor Fence, 6615 Eastern Ave., Baltimore 24, Md.



Plants in: Baltimore, Md., Houston, Texas, and Whittier, Cal. • Sold direct from factory branches in principal cities
For More Information Write No. 215 on Place Mark Card—Page 32



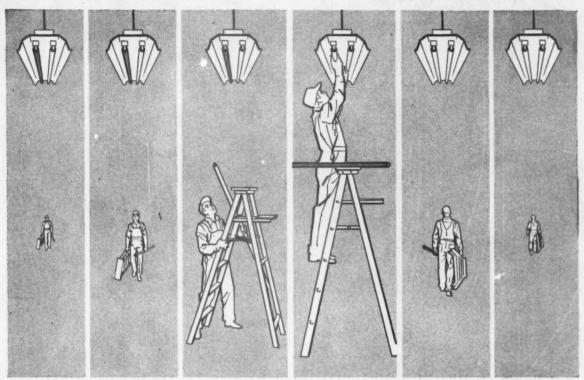
Purchase for Profit!

Specify Chicago Molded

Babies . . . and mothers, too . . . love this attractive General Electric Automatic Baby Food Warmer. Each compartment is decorated with colorful molded-in Mother Goose characters. It's molded in two parts, using tough, long-lasting melamine and with a non-porous surface that is impervious to bacteria. Here, again, CMPC solves a tough molding problem, provides top quality, and holds costs to a minimum . . . more evidence that you purchase with profit when you specify:

CHICAGO MOLDED PRODUCTS CORPORATION 1020H North Kolmar, Chicago 51, III.

How long does it take him to replace one lamp?



TWENTY MINUTES! That's the average time it takes to replace one lamp. First the phone call for maintenance, then the requisition, lamp, ladder, hike to the site, lamp replacement, the walk back, disposal of old lamp, put ladder away. And work interruptions among other employees, caused by one-at-a-time lamp replacements are an expensive item not included.

This General Electric Plan can save you 26 hours labor on every 100 lamps you use!

It takes a man about 33 hours to replace 100 lamps if he does it one-at-a-time... and less than 7 hours if he does it with this modern General Electric Plan for group relamping. That's a cut-and-dried savings of 26 hours for every 100 lamps you use. Twenty six times the hourly cost of your maintenance man!

But there's more! With this plan you also get up to 25% more light, 75% fewer work interruptions, 75% fewer buying and stocking headaches . . . and a better looking lighting system.

Records prove this simple plan works best with General Electric Lamps. Why? Because they have a more uniform lamp life. They last most customers well over 2 years . . . with fewer early burnouts. What's more, the plan has a built-in reminder that eliminates record-keeping—tells you when it's time to begin another cycle. Right now is the best time for you to suggest this money-saving system to your company.

Send coupon for full information on General Electric's

For More Information Write No. 216 on Place Mark Card-Page 32

simplified Group Relamping Plan. It's free, no obligation, When you get it, see for yourself just how much you can save—in good hard cash for your company.

Progress Is Our Most Important Product



MAIL THIS COUPON TODAY!

General Electric Co Nela Park, Clevelar	., Large Lamp Dept. C-022 nd 12, Ohio
	hting maintenance costs to the bone! iformation on General Electric's Group ht away!
NAME	
COMPANY	
ADDRESS	
CITY	ZONESTATE

For More Information about ad an following page Write No. 217 on Place Mark Card - pg. 32→

June 6, 1960

107

stainless from exeative Crucible

Whiere a .

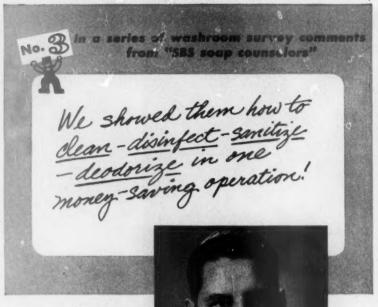
fine finish reflects perfection,

The lustrous finish of Crucible stainless reflects steelmaking perfection. But steelmaking to exacting specifications is only the beginning of engineering and warehouse services that are continually available to you. To see how they'll help you enhance your product with stainless steel, just call or write the nearest of the 34 local Crucible service centers.

CRUCIBLE

Stainless Steel

TELL BY RIGIDIZED METALS LURPORATION. STAINED IS SHEET STAIP RUD AND WHE BY CRUCIBLE STEEL COMPANY OF AMERICA, PITTSBURGH 30, PA



Edward T. McNamara, Jr.

SBS soap counselor, has helped many plants in the Southwest improve their wash-up and clean-up programs. Here's an excerpt from his account of a survey at a synthetic rubber plants

"We found washroom housekeeping costs way up . . . for the usual reasons. Maintenance men were using slow-acting scrub soaps, scouring powder and disinfectants. These single-purpose products required lots of elbow grease and needless duplication of effort.

"Plant Management was pleasantly surprised when we showed them how easily a single product, new SBS 50 handles ALL of these washroom chores in less than half the time!" SBS 50 cleans - sanitizes - disinfects - deodorizes in 1 economical operation! Just one swish of a mop or washcloth with SBS 50 cleans soils from walls, floors, fixtures — all the places where germs breed. No scrub, no rinse, no waste motion! SBS 50 is especially formulated to simplify industry's housekeeping chores. Its effective 4-way action reduces maintenance costs.



Money-saving suggestions like this begin with OPERATION PINPOINT—a thought-provoking presentation filled with facts about skin hygiene and washroom maintenance. The SBS soap counselor serving your area can pinpoint the right soap to do every skin cleansing job best and at lowest cost in your plant. Let him show you OPERATION PINPOINT . . . just call your nearest SBS office, collect.

the washword of industry



SAGINAW, MICH. • Los Angeles, Calif. • Newark, N.J. CANADA: Chemical By-Products, Ltd., Toronto, Ontario



For More Information Write No. 218 on Place Mark Card-Page 32

Products

(Continued from page 106)

.02pH. Unit weighs only 5 lbs. and requires only a standard 115 volt AC outlet. Features include single operating control and high output electronically modulated amplifier, with printed circuitry and sensitive meter elimination. Polyethylene electrode Probe Unit permits user to "bring the meter to the sample—not the sample to the meter." Analytical Measurements, Inc., 585 Main St., Chatham, N.J.

Write No. 32 on Place Mark Card—Pag. 32.

Metatarsal Guard Fits High and Low Shoes



A stainless steel metatarsal guard to supplement the protection provided by steel toe safety shoes fits high and low shoes. Guard attaches through laces of shoes. There are no attachments under or around the foot, and it will not interfere with flexing of ankle. One guard fits all sizes, and there are no rights or lefts. Heavy sponge cushion provides comfortable padding. Albert W. Pendergast Safety Equipment Co., Tulip and Longshore Sts., Philadelphia 35, Pa.

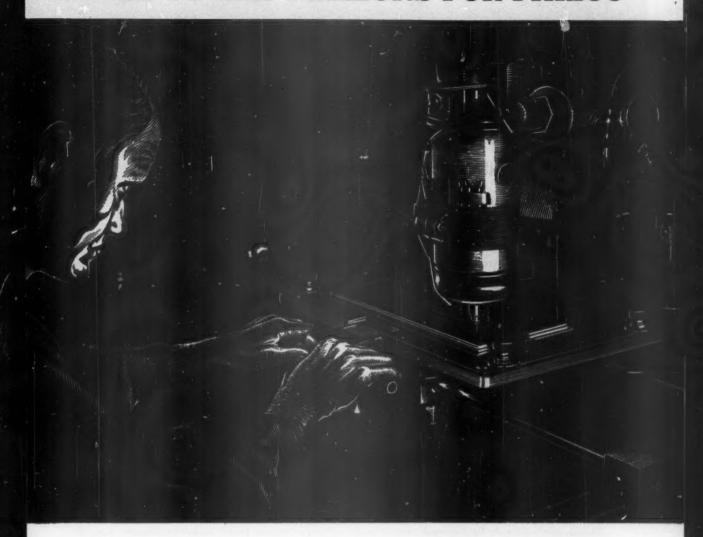
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Belt Sander Gives Dust-Free Sanding

A belt sander with a vacuum pickup attachment provides sanding that is almost dust-free. System is said to be 90% efficient where resins, lead and wood are sanded, allowing sanding and (Please turn to page 114)

Write No. 219 on Place Mark Card—pg. 32— For More Information about an on facing page PURCHASING

MORSE MAKES MILLIONS FOR PHILCO



... millions of tiny holes—precision-drilled by rugged, long-life Morse "Electrolized" Tools for Philco's fabulous Transac.

It's the world's first large-scale all-transistor computer — Philco's new Transac S-2000. Among its components: 18,000 printed circuit cards of epoxy resin glass fiber—highly abrasive, excessively wearing on the tools that have to drill hundreds of tight-tolerance holes in each card.

Philco uses the tools that are armored for rugged action: Morse "Electrolized" drills. More durable than high speed steel... more flexible than carbide... savers on down-time, replacement.

Morse will help you, too. Tell your cutting tool problem to your Morse-Franchised Distributor. He's the man with the answers.

MORSE

means "THE MOST" in Cutting Tools
MORSE TWIST DRILL & MACHINE CO., NEW BEDFORD, MASSACHUSETTS
Warehouses in: NEW YORK · CHICAGO · DETROIT · DALLAS · SAN FRANCISCO



Morse means more production... smoother, more accurate production ... with every type of cutting tool from drills, reamers, taps and dies, to end mills, milling cutters, slitting saws and "specials". So, if you want the best from every cutting tool you buy, mark your order "MORSE". For if you want Morse Quality, there's only one way to get it... specify Morse.

A Division of VAN NORMAN INDUSTRIES, INC.

IDDA VA IDDA



Keeps Air Conditioning

This is a planned family. Each control is meticulously engineered for a special task... meets extremes of dependability... and is priced to the needs of volume users. RBM's development of the "parent" control led to quick recognition of the air conditioning industry's need for a complete family. Now there is a single source for all magnetic air conditioning controls.

WHAT DOES IT MEAN TO YOU? Simply this: what RBM has done here . . . and in scores of other cases . . . it can do for you! RBM has the engineering staff and the manufacturing facilities to help you with any control problem you have. Either one that exists

now... or one that is in the development stage. If the application can be served by an existing control, we will find it. If the application demands a special design, we will develop it. RBM, in close cooperation with other Essex Divisions, can even help you engineer a complete control system.

That's where RBM can save your time, your nerves and your company money...including frequent savings in "finished product" cost.

Consult your local RBM Product Application Engineer, or send your specifications direct.

OTHER ESSEX ENGINEERED CONTROL COMPONENTS

Wire and Cable

A complete line of appliance wiring material, radio, television and electronic hook-up wire, 200°C high temperature SII-X wire, automotive wires and cables, and flexible cords.

Essex Industrial Wire Products, Wire and Cable Div. Essex Wire Corp. Marion, Indiana





Coiled Cords, Cord Sets

Plastic and rubber power supply cords. Terminations of all types (molded plastic and rubber). Complete line of Coiled Cords in HPN, Type SP and Types SV, SJ; covering full appliance rases

CORDS, LTD. Wire and Cable Div. Essex Wire Corp.





Industrial Plastics

Flexible and rigid vinyl extruded shapes and foam custom designed and volume manufactured to meet your exact needs. Now producing for a variety of industrial ap-

Carolina Industrial Plastics Div. Essex Wire Corp. Mount Airy, North Car





Under Complete Control

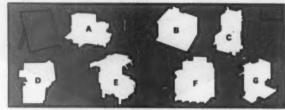
(A) SERIES 12900 SHUNT TYPE RELAY—SPNO, SPNC or NO-NC For standard commercial voltages. Other coils available for special application. For heater, fan control, general circuit switching, etc. Write for bulletin 1010A.

(B) SERIES 128000 POTENTIAL STARTING RELAYS For starting single phase capacitor start compressors. Write for bulletin 1010A.

(C) TYPE 5-39, S-49 CONTACTORS Rated 30 or 40 amps. Low cost, small size. Exceeds rigid requirements of industry's largest users. Write for bulletin C-10.

(D) TYPE 75 POWER RELAY Low cost, dependable. Handles up to to 6000 W. at 240 V., resistive load per pole. Compressor rating 2 poles, 18 amp. running, 90 amp. locked rotor at 250 volts. Write for bulletin 1030.

(E) TYPE 86 CONTROLLER Specific design for nominal 3 HP or 3-ton single phase compressors. Write for bulletin C-11.



(F) TYPE C-30, C-40, C-50 CONTACTORS 2-3-4 pole 30 amp.—600 volts. 2-3-4 pole 40 amp.—230 volts. 2 pole 50 amp.—230 volts. Same mounting holes and colls for all ratings and pole forms. Write for bulletin 1070.

(G) GENERAL PURPOSE RELAY 98000 Series AC or DC. Permits engineering short cuts lowering "finished product" cost. Write for bulletin 1080.

For a complete set of bulletins on all of these controls write today,



RBM Controls Division

Essex Wire Corporation, Logansport, Indiana

Factories located at North Manchester and Logansport, Indiana



For More Information Write No. 220 on Place Mark Card-Page 32

Products

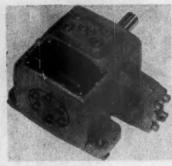
(Continued from page 110)

painting in same general area. Clogging is minimized, and belts sand faster and last longer. Soft sponge rubber pad provides easier contour sanding. Full 4 in. belt has 20% more sanding sur-



face than 3 in. dustless sanders, but model weighs 20% less. Design allows flush sanding up to vertical surfaces, and gearless transmission never needs lubricating. Skil Corp., 5033 Elston Ave., Chicago 30, Ill. Write No. 14 on Place Mark Card-Page 32

Variable-Volume Pump Line



Four variable-volume pumps employ the movable-cam-ring principle for automatically adjusting volume to demand while maintaining constant pressure. Two models are 500 psi, 7 gpm pumps; two are 100 psi, 6.5 gpm. Variable-volume pumps are used in hydraulic systems when efficiency under varying operating conditions is an important consideration. They deliver only the amount of hydraulic fluid necessary at a constant pressure for the load at any given instant. Unloading valves are not needed, power is not wasted and little heat is produced. DoALL Co., Des Plaines, Ill. Write No. 35 on Place Mark Card-Page 32

Fully Molded, Jacketed Notched V-Belt



A fully molded, fully jacketed notched V-belt features quiet, vibrationless running characteristics, ruggedness and greater flexibility, which permits it to run smoothly over smaller pulleys.

(Please turn to page 118)







For More Information Write No. 221 on Place Mark Card-Page 32



For More Information about an on facing page Write No. 222 on Place Mark Card—pg. 32→



No matter how you look at it...

DELTA SERVICE SAVES TIME AND MONEY

Look first in the Yellow Pages—you'll see your Delta Industrial Distributor listed under "TOOLS" or "MACHINERY." He has a real knowledge of Delta Industrial Tools, an understanding of industrial problems, and a desire to serve you in such a way that you'll keep on being a customer.

Here's how he can save you time and money: By helping you select exactly the right tools for your production, maintenance, and crating needs from the world's most complete line of metalworking and woodworking tools—at prices competitive with any-

thing in their class. By delivering to you the finest industrial tool values on the market today—Delta quality tools that lower maintenance and operating costs for years to come. And by standing behind the Delta Tools he sells you with prompt and willing service that cuts your downtime and simplifies your parts inventory.

Why not call your Delta Industrial Distributor and let him prove to you how Delta quality—combined with on-the-spot service of equally high qual-

ity-can save you time and money?



FOR YOUR FILES—catalog of the world's most complete line of industrial tools—pictures and describes 61 machines, 302 models, over 1400 accessories. For free copy, write: Rockwell Manufacturing Co., Delta Power Tool Division, 728F N. Lexington Ave., Pittsburgh 8, Pa. In Canada: Rockwell Manufacturing Co. of Canada, Ltd., Guelph, Ontario.

DELTA INDUSTRIAL TOOLS

another fine product by

ROCKWELL

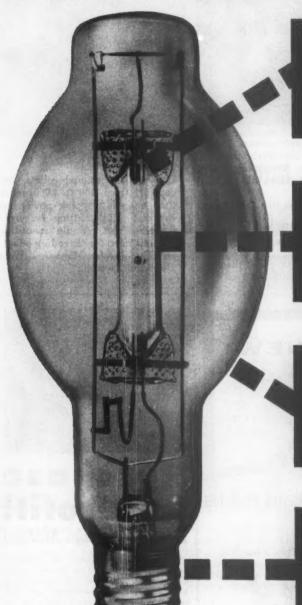


EXCLUSIVE WEATHER LIFEGUARD ARC TUBES YOUR BEST BUY IN MERCURY LAMPS!

By any standard of comparison, new Westinghouse "Lifeguard" mercury lamps are the most economical choice for industrial, street, and parking lot lighting. The exclusive Westinghouse "Lifeguard" arc tubes in these lamps save you money by maintaining high initial light output longer. And, they make possible lower-cost new lighting installations.

In addition to getting more light per dollar, you save on labor and maintenance costs, too, with less frequent lamp changing. And "Lifeguard" lamps are made with famous Westinghouse "Weather Duty" bulb construction for resistance to thermal shock, moisture and all industrial fumes. New Westinghouse "Weather Duty" lamps with "Lifeguard" arc tubes are interchangeable with other types of the same wattage. Make the change today. Contact your authorized Westinghouse lamp agent or nearest Westinghouse sales office.

DUTY" LAMPS WITH MAKE WESTINGHOUSE





New design electrodes with specially-compounded and locked in emission material virtually eliminate light-robbing arc tube blackening.

"Lifeguard" arc tube improves lumen maintenance . . . 85 percent of initial light output after 10,000 hours.

First with "Weather Duty" lamps fume-proof and moisture-proof, shock-resistant glass.

Permanent-grip silicone cement 'holds bases tight for the life of the lamp. Remains strong at high temperatures. No strain on glass.

YOU CAN BE SURE ... IF IT'S Westinghouse

Westinghouse Lamp Division . Bloomfield, N. J.

For More Information Write No. 223 on Place Mark Card-Page 32

Products

(Continued from page 114)

Flex-cracking is eliminated, and fatigue resistance greatly increased. Belt resists cross-sectional distortion and changes in effective length, and unique construction permits it to outlast other belts as much as eight to one. At present for original equipment manufacturers only. Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N.J. Write No. 36 on Place Mark Cord—Page 32

Pipe Simplifies Recirculation Problem

A uniquely designed pipe has built-in channels to simplify and reduce the cost of recirculating heating-fluids required in piping systems. Two integral channels flank a large, product-carrying pipe area. Heating medium travels through one small oval passageway, maintaining temperature of bulk material in the product line to insure a free flow. At terminal, fluid is reheated prior to being

returned through second channel. Pipe is available in 2, 3 and 4 in. sizes, and can also be used for



circulation of refrigerants and for conveying several products in one piping system. Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19, Pa. Wite No. 37 on Place Mark Card—Page 32

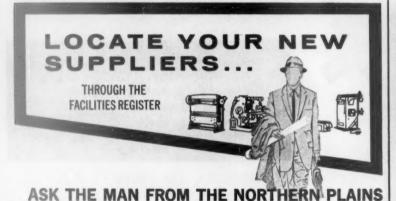
Collet Chuck Offers Many Advantages

A collet chuck for lathes has a handwheel-operated, nose-type closure and features "Rubber-Flex" collets. It offers easier, faster collet changing; capacity increases up to 42%; runout of no more than .001 in. at the nose; a range of .100 in., twenty times



that of conventional collets; bar capacity from .100 to 1.063; more than enough gripping power for heaviest duty cutting on light lathes; direct spindle mounting without need for threading adapter. The Jacobs Mfg. Co., West Hartford, Conn.

Write No. 38 on Place Mark Card-Page 32



to put you in direct contact with the manufacturers whose wide variety of production is available to you. An accurate plant by plant, machine by machine study has been made and electronically tabulated by Northern Natural Gas Company and other natural gas utilities serving the 5 Northern Plains States. Qualified producers are being referred to industry quickly and without obligation.

To utilize this service write Randall Klemme, Vice President, Northern Natural Gas Company, Omaha 1, Nebraska, or call Webster 7600.



Serving the Northern Plains
Northern Natural Gas Company
General Offices: Omaha, Nebraska

This Unique Service is Yours ... Simply For The Asking

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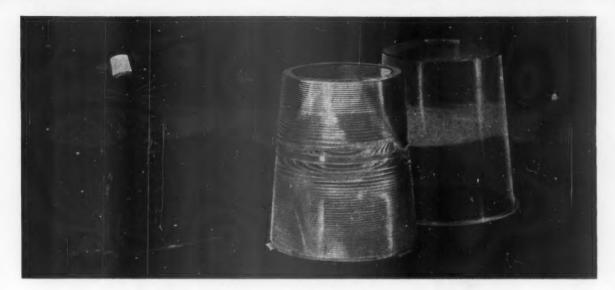
Purchase for Profit!

Specify Chicago Molded

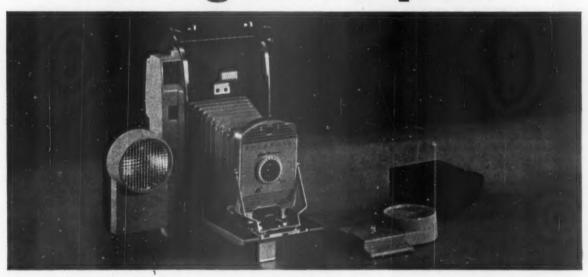
Here is the non-combustible Gratelite Louver Diffuser molded for Edwin F. Guth Company, St. Louis. For this complex piece, a specially developed fire-resistant urea plastic material was used which retains the required light diffusion properties. This new type louver is dimensionally stable and highly resistant to dirt. Anyway you look at it... a problem solved...satisfaction delivered...it's purchasing for profit...a good reason for you to call:

CHICAGO MOLDED PRODUCTS CORPORATION 1020 H North Kolmar, Chicago 51, III.

Purchasing



Handsome and Hardworking Plexiglas...Implex



Flashing lights at sea shine brightly through large lenses and covers molded of PLEXIGLAS® acrylic plastic. The PLEXIGLAS parts are used in navigation lights for the U. S. Coast Guard, at a fraction of the cost and weight of cut glass lenses. Precision molding of the lens pattern gives the PLEXIGLAS lens maximum efficiency in light control, and the material resists weather, breakage and salt water.

Winking lights at home are revolutionizing indoor photography by making indoor pictures without flashbulbs possible, with the new wink-light attachment shown above. Tough IMPLEX®, the high impact acrylic, gives handsome appearance and rugged durability to the housing. PLEXIGLAS is used for the lens.

We will be glad to help you use these Rohm & Haas acrylic molding materials—to your advantage.



Chemicals for Industry

ROHM & HAAS

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

In Canada: Rohm & Haas Company of Canada, Ltd., West Hill, Ontario.

At last! The First Color-True Fluorescents ...LUSTRA NORTHLITE



Here's the engineer's dramatic lighting answer to the color control problem-LUSTRA NORTHLITE-the first fluorescent to approximate the desirable lighting of the artist's skylight. This unique lighting permits every industry, every store, every producer of color-true products... in printing, textiles, or plastic...in department stores, dress salons, furriers, milliners, haberdasheries ...in sales areas, work areas, dis-play areas...to change from the present over-blue or over-red lamps to 24-month-guaranteed Lustra NORTHLITE, approximating 5500°K. temperatures to a point where your color guess-work is ended. Now available in all standard sizes... for your present standard fixtures I

Send immediately for the full technical details on the amazing new LUSTRA MORTHLITE fluorescents!



LUSTRA CORPORATION OF AMERICA
Dept. P-6, 32-32 67th Ave., Long Island 1, N. Y.
For More Information Write No. 226
on Place Mark Card—Page 32

Products

For Continuous Brazing Operations



Cast Iron Liquiflux for brazing and welding was developed primarily to facilitate the brazing of brass to cast iron and cast iron to steel with brass. Product permits continuous brazing operations without the necessity of painting the metal with powdered flux and without dipping the welding rod into powdered flux. Flux is vaporized and inducted into gas stream automatically as required and passes through welding torch into flame. Rexarc, Inc., West Alexandria, Ohio.

Write No. 39 on Place Mark Card-Page 32

Cone Bottom for Storage Structures



A glass-fused-to-steel "cone bottom" is designed for 14 ft. diameter Permaglas storage structures. Unit will provide processors with corrosion-resistant glasscoated cone bottom for gravita-

tional flow of edible and nonedible materials. Cone has 2 ft. diameter flanged discharge opening. Volume capacity of 50 ft. Permaglas structure fitted with new cone is 8000 cu. ft. Specially designed steel support structure is provided for inside or outside installation. A. O. Smith Corp., Harvestore Products, Kankakee, III.

Write No. 40 on Place Mark Card-Page 32

Small, Powerful Air Cylinders



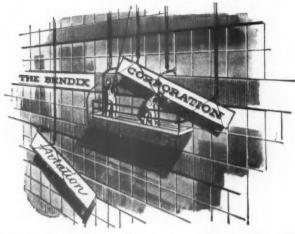
Small, powerful air cylinders supply maximum power in minimum space. Double-acting units have 1 in. bores and are suitable for air pressures up to 125 psig. Six models are offered, ranging in length from 4-19/32 in. to 15-19/32 in., with stroke sizes of 1, 2, 3, 6, 9 and 12 in. Cylinders are ideal for operating jigs and fixtures, and for transfer and special purpose machines. Corrosion-resisting brass body and piston plus solid brass end plates provide sturdy construction and dependable performance. A. Schrader's Son, Div. of Scovill Mfg. Co., Inc., 47 Vanderbilt Ave., Brooklyn,

Write No. 41 on Place Mark Card-Page 32

Automatic Weighing and Stamping Unit

A completely automatic weight brander weighs cartons or containers and stamps the weight right on each unit. Complete unit can be furnished with conveyors, walking beam or other mechanisms which transfer the object (Please turn to page 124)

We've changed our name to The Bendix Corporation



To reflect our dynamic growth in such fields as electronics, missiles and space, automotive, weapons systems, computers, machine tools, instrumentation, nuclear technology, hydraulics, meteorology, electrical, marine and others, we dropped "Aviation" from our corporate name on June 1, 1960. We do not wish to convey the impression that our products and skills are limited to the aviation field alone, although aviation products accounted for billings of \$388,700,000 in 1959.

Today Bendix®—through 25 divisions and 16 subsidiary and affiliate companies around the world—serves many fields.

Our success in the rapidly expanding age of aviation has long obscured the fact that the Bendix automobile starter drive was the company's first major product. Bendix introduced the type of four-wheel brakes that over the years has been used on most makes of cars. Bendix also pioneered automotive power brakes and power steering. Our automotive business in 1959 totaled \$114,300,000.

A notable trend in Bendix' recent history is the utilization of electronics in many of our major fields of activity. These range from automobile radios to aircraft and industrial communications and automatic flight controls . . . from electronic computers and data processing to numerical tape control systems for machine tools . . . and from transistors and ship-to-shore telephones to sonic cleaning and undersea sonar detection equipment. Approximately 40% of Bendix products are electronic, including air defense radar which today guards 25 million square miles.

Missile and space equipment

accounted for \$103,000,000 of our total business of \$689,692,312 in 1959. In addition to being the prime contractor for two important missiles, Talos and Eagle, we are also a supplier of components and sub-systems for most U. S. rissiles. Bendix is likewise taking an active part in Project Mercury and in satellite communications. The first is the program to put a man into space. The second will mark a new era in communications by using a satellite in orbit as a relay station for global radio messages.

Bendix also has a growing and diversified nuclear program. Since 1949 we have operated the Kansas City Division for the Atomic Energy Commission. It is a large manufacturing organization employing 7,500 people engaged in the atomic weapons program. We also supplied control mechanisms for nuclear submarines and nuclear industrial power plants, and we are playing a part in developing the newest U. S. atomic power plants for aircraft, missiles and space vehicles.

Thus, as we drop "Aviation" from our corporate name, but not from our programs, we face a tomorrow

where the range of our opportunities is broadening at a breathtaking rate.

A thousand

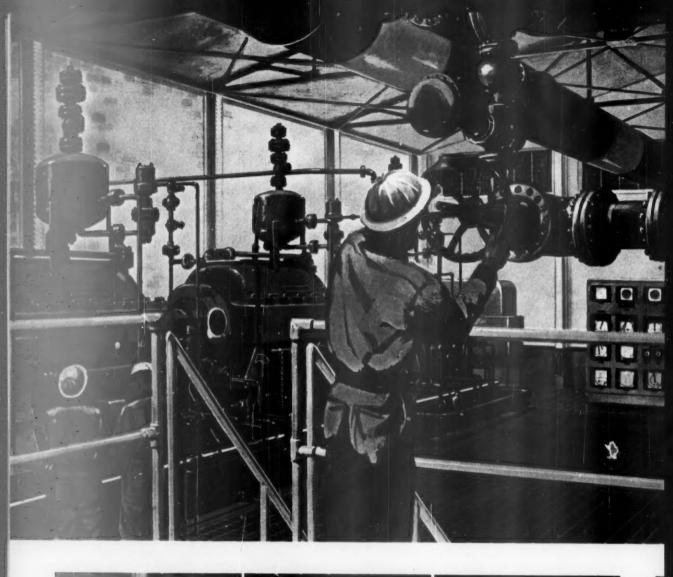


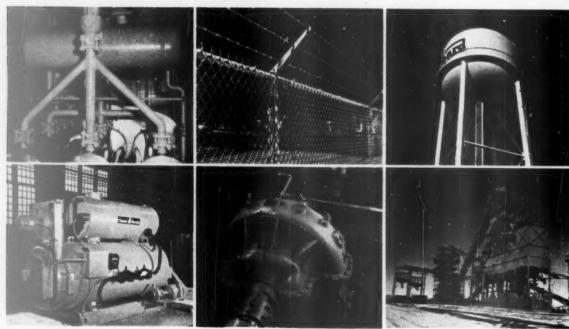
diversified products

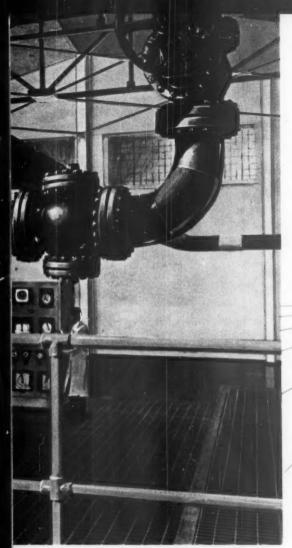
For More Information Write No. 227 on Place Mark Card-Page 32

JUNE 6, 1960

For More Information about ad on following page
Write No. 228 on Place Mark Card—page 32—







Rust-Oleum

NEW COLOR HORIZONS

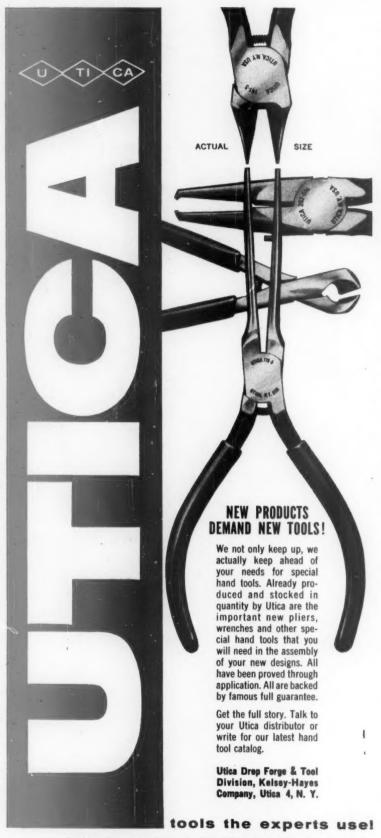
System

Here is a modern, functional system that combines four important points. (1) the ability to stop rust, (2) modern color harmony, (3) durability to last and last, (4) ease of application. From machinery, equipment, and structural steel to tanks, steel fences and metal sash – the Rust-Oleum New Color Horizons System can provide lasting beauty in the colors of your choice. Ask your Rust-Oleum Industrial Distributor, together with your Rust-Oleum Factory Specialist, to make a survey of your plant and provide complete recommendations. Rust-Oleum Industrial Distributors maintain complete stocks for prompt delivery in all principal cities of the United States, Canada, and in many countries around the world.

Rust-Oleum, in its various forms, can also save you time and money on problems like these: Heat Resistance, Water Resistance, Chemical Resistance, Coating Galvanized Metal, Speedy-Dry Coatings (less than thirty minutes to dry).





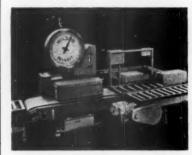


For More Information Write No. 229 on Place Mark Card—Page 32

Products

(Continued from page 120)

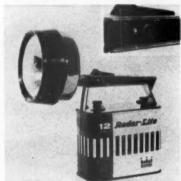
from load station to scale to stamping equipment and beyond if desired. Device is highly adaptable, and duplicate recording of weights or any combination of



operations can be built into the machine. Production speeds to 600 units per hour and higher are possible, depending on package and weight range. Wilson Automation Co., 27101 Groesbeck Highway (Warren) P.O. Box 3855, Detroit 5, Mich.

Write No. 42 on Place Mark Card-Page 32

Lantern is Twice as Bright As Auto Light



A super-powered, battery-operated portable lantern has more than twice the candlepower of the brightest automobile headlight. Powered by compact 12-volt battery, Burgess Radar-Lite lantern has 80,000 candlepower beam which provides nearly a full mile of visability. Switch-Lock secures contact switch in "off" or "on" position, guaranteeing that lantern cannot be turned on accidentally. A unified battery-and-case is attached to separate lighthead assembly. Burgess Battery Co., Div. of Servel Inc., Freeport, Ill.

Write No. 43 on Place Mark Card-Page 32

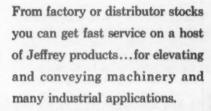


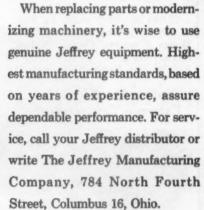




Jeffrey equipment stocked for shipment





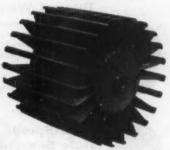




BUCKETS



PULLEYS





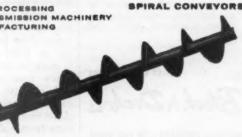
PILLOW BLOCKS





DISCHARGE VALVES

CONVEYING . PROCESSING
MINING EQUIPMENT...TRANSMISSION MACHINERY
CONTRACT MANUFACTURING



For More Information Write No. 230 on Place Mark Card-Page 32



Cut costs, speed work with B&D accessories



B&D Drill

Stands convert your portable Black & Decker Drill into a drill press for heavyduty work. Available in all sizes.





High-Speed Hole Saw cuts clean, round holes powered by your B&D Drill. Other accessories

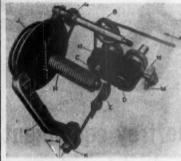
stocked by your B&D distributor include mandrels, right angle attachments, bits, arbors, specialized chucks. Call him today.



ACCESSORIES DESIGNED FOR THE TOOL For More Information Write No. 231 on Place Mark Card—Page 32

Products

Major Advance in Winch Design



A hydraulic winch of advanced design combines constant load, constant speed, constant torque and constant horsepower with safe, efficient one-man operation. Instead of being combined in single drum, power and storage functions of winch are separate, with two power drums to do the pulling while large-capacity storage drum takes up the cable. The result is a winch with a 12,000 lb. rating that is said to outperform a 20,000 lb. rated winch by four to six times. Braden Winch Div., Motor Products Corp., Broken Arrow, Okla.

Write No. 44 on Place Mark Card-Page 32

Space Age Glove for **Extreme Temperatures**



A glove intended for use whenever extremes of temperature are encountered provides complete protection both at temperatures close to absolute zero and up to 1200 degrees F. Glove is manufactured in 3 parts. Basic glove uses combination of air and quality rubber to protect hand. Specially tanned leather glove worn over basic glove protects from cold. Covering aluminized asbestos glove replaces leather shell for heat protection. Glove is not bulky, and wearer can manipulate instruments and dials with ease. J. M. Rubin & Sons, Gloversville, N.Y. Write No. 45 on Place Mark Card-Page 32

Self-Adhering, Solid **Nylon Sliding Tape**



introductory "industrial pack" is designed to acquaint users with Nyl-O-Tape self-adhering solid nylon sliding tape. Pack contains six foot length of each of five standard widths, 1/4, 38, 1/2, 3/4 and 1 in., normally packed in 100 ft. coils. To use, paper backing is simply removed and tape is pressed into place. Self-lubricating tape minimizes friction and friction-wear and adheres firmly to metal, wood, plastic and other surfaces without additional adhesives. Hardware Designers, Inc., P.O. Box 4, South Hackensack, N. J. Write No. 46 on Place Mark Card-Page 32

Multiple Viscosity **All-Season Premium Oil**

A premium motor oil now being marketed is a multiple viscosity, all-season, "cold proofheat proof" oil, meeting S.A.E. 10W, 20W, and 30 classifications. Improved base stocks minimize engine knock, destructive preignition and rumble effects in modern high compression engines. High detergency, all distillate oil far surpasses manufacturer requirements for preventing scuffing, wear, corrosion, oxidation, rusting and sludge formation under severe operating conditions. Gulf Oil Corp. Pittsburgh 19, Pa.

Write No. 47 on Place Mark Card-Page 32



Light in your hands, tough on the job!



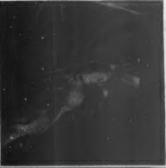


most powerful drill of its TREMENDOUS TORQUE developes available, the Black & oped by this %" H.D. Hol-Decker %" Standard. Pow-gun@ takes on the tough ered to pull a locomotive ones with ease. Compact to with full power in reverse; work in tight quarters, this positive drive chuck.

tool's a "best buy."

PRILLS UPSIDE DOWN! B&D POWER NEARLY DOUBLED in Magnetic Drill Presens stick B&D ¾", ¾" and ¾" End like glue in any position; Handle Drills gives you operate manually or with more performance for the exclusive remote control. prico... better control for 1¾" or ¾" capacities.





Make those heavy drilling jobs go quicker, easier . . . with the lightweight Black & Decker 1/2" Special Drill. Its precision-balance, compactness and years-ahead design make handling easier yet. And, of course, famous B&D rugged construction proves itself right through any job.

No matter if you're drilling a small hole in trim or a large hole in structural steel . . . you can find the drill you need, from 1/4", in the line preferred throughout industry-Black & Decker. You always get the best motors, the finest construction, the newest features (such as, full power in reverse). Why not see the complete line?



MAIL COUPON FOR FREE BEMONSTRATION

THE BLACK & DECKER MFG. Co., Dept. 1706 Towson 4, Md. (In Canada: Brockville, Ont.)

- Please arrange for a demonstration of the following drill(s).....
- D Please send me additional information on



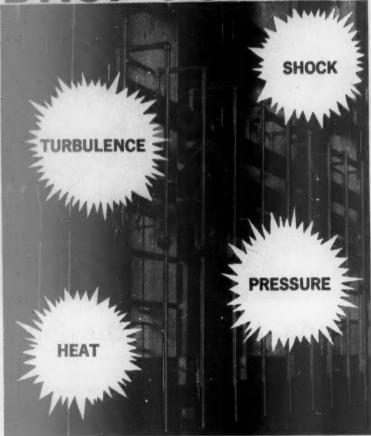








DROP FORGED



For critical jobs, the brand to look for is



When the piping application is most difficult, that's where you'll find W-S Forged Carbon Steel Fittings. Under the toughest conditions, these are dependable connections which stand up. Here's why:

- Drop forged for exceptionally high tensile and impact strength.
- · Long, accurate threads, in perfect alignment.
- · Uniform wall thickness, for safety.
- Accurate machining for tight fit.

For specifications and Distributor locations, write Forge & Fittings Division, H. K. Porter Company, Inc., Box 95, Roselle, N. J.



FORGE AND



FITTINGS DIVISION

H. K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY with steel, rubber and friction products, asbestos textiles, high voltage electrical equipment, electrical wire and cable, wiring systems, motors, fans, blowers, specialty alloys, paints, refractories, tools, forgings and pipe fittings, roll formings and stampings, wire rope and strand.

For More Information Write No. 232 on Place Mark Card-Page 32

128

Products

Insulating Spray Gives High Resistance



An insulating varnish-enamel in a self-spraying container provides high resistance to oil, water, acids and alkalis for electrical equipment. Packed in 16 oz. aerosol can, insulating spray is intended for use on new or old stator windings, armatures, coils, switchboard parts, bus bars and the like. It penetrates thoroughly and dries quickly to a tough, flexible film with high adhesion characteristics, arc-resistance and non-tracking properties. Spray may be used either as finishing varnish or primer and may be baked or airdried. Ind. Supply Div., Sprayon Products, Inc., 2075 E. 65th St., Cleveland 3, Ohio.

Write No. 48 on Place Mark Card-Page 32

Longer-Lasting, Tougher Wire Rope

A wire rope that is the result of a new wire drawing technique is tougher and longer-lasting. Made from extra improved plow steel with independent wire rope core, product has 15% greater breaking strength than rated strength of improved plow steel wire rope. Molysulphide used in wire-drawing process provides a permanent molecular shield around each wire which cushions against the effects of bending, crushing and abrasion. Nearly frictionless interaction between wires means greater life for each wire and for entire rope. Colorado Fuel and Iron Corp., Continental Oil Bldg. Denver 2, Colo. Write No. 49 on Place Mark Card-Page 32

PURCHASING



One...two...that's all you do...for perfect 2-strip closure!

Two-Strip closure has revolutionized carton sealing and slashed shipping room costs. Independent laboratory tests have proved conclusively that the 2-Strip sealing method is more than twice as fast as stapling.

TROJAN® CORD TAPE has been specially developed and manufactured by The Gummed Products Company to give you perfect 2-Strip sealing. Trojan Cord Tape is bidirectionally reinforced with glass fiber and laminated with an asphaltic compound between two plies of quality kraft. Result—a tape of extraordinary strength and durability. (Trojan Cord Tape exceeds all requirements of Rule 41, Uniform Freight Classifica-

tion.) At the same time, Trojan Cord Tape is Flexoned® for ease of handling, faster sticking and greater production line speeds.

Trojan is available in asphaltic or non-asphaltic grades, plain, printed or in colors, double-packaged to assure "mill-freshness." For perfect 2-Strip closure every time, order the tape that was made for the job—Trojan Cord Tape.



Watch for Trojan Cord Tape in its bright new carton!

The Gummed Products Company

Division of St. Regis Paper Company . Troy, Ohio

For More Information Write No. 233 on Place Mark Card-Page 32

June 6, 1960

For More Information about ad on following page Write No. 234 on Place Mark Card—pg. 32

COLUMBIA



INDUSTRIAL FASTENERS like this Socket Head Cap Screw are produced to a dynamic reliability standard as a result of SPS research. The SPS line includes a limitless variety of self-locking screws, locknuts and precision fasteners for everything from massive machinery to the most minute products.

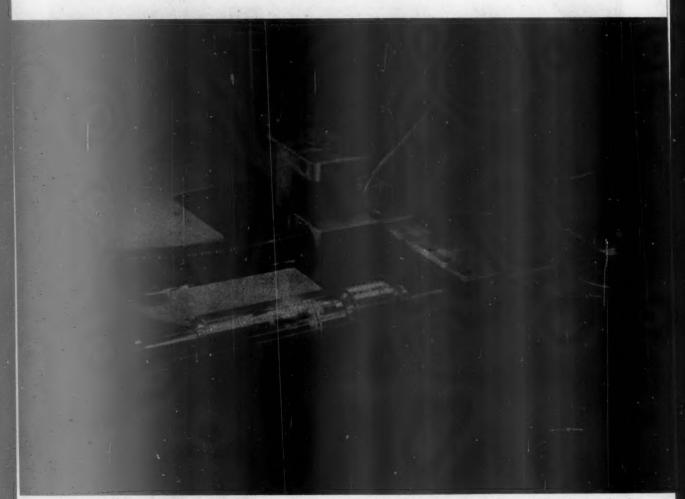


AIRCRAFT/MISSILE FASTENERS like this bolt are produced to ultra-high performance standards at SPS. Today's lightest, strongest fasteners in standard and special designs are products of SPS. Research and development work includes titenium, beryllium and other lightweight, high-strength exotic metals.



NUCLEAR COMPONENTS like this cap for a core housing are held to almost unbelievable dimensional tolerances. The nuclear energy field depends on SPS for threaded fasteners, control rod drive mechanisms, motor tubes, core components, instrumentation housings and many other essential parts.

SPS engineering automates



Stop-motion photograph of SPS automated Set Screw Driver. Standard UNBRAKO Set Screws are made to such close tolerances that they are ideal for use in all high speed automated assembly operations.



SHOP EQUIPMENT for industry and schools is made to the same superior quality standards as other SPS products. The Hallowell line offers broad coverage of standard and special needs in work benches, shelving, and similar equipment. Ruggedness and space efficiency are well identified with Hallowell.



OFFICE FURNITURE like this handsome Columbia Nine-to-Five unit sets an office apart with distinctive styling and color combinations. The complete line includes efficiently designed, durable steel office furniture, plus special units, a wide choice of smart chairs, filing cabinets and accessories.



CAPACITORS FOR ELECTRONICS bearing the IEI trademark are widely used for subminiature circuitry and transistorized applications. This SPS company makes both aluminum and tantalum capacitors, including the lightest and smallest per given capacitance in the industry, to the highest quality standards.

the humble socket set screw



Why would a fastener manufacturer invent an automated machine for customers?

Simple logic—UNBRAKO Set Screws are "automation quality", but until recently lacked an automatic driving mechanism capable of taking

full advantage of that quality.

SPS engineers developed the Setomatic® automated set screw driver with remarkable results. Customers now install 2,500 Unbrako set screws per hour... compared to 335 by hand and 650 by power tools. Costs are down from about \$.99 to \$.15 per

hundred. Quality is higher and more uniform.

Amazing as the machine is, the real story for fastener users is how the Setomatic is daily proving the superior quality, improved design and cleanliness of UNBRAKO High Torque socket set screws.

Automated or hand-driven, your own applications can benefit from the extra reliability built into UNBRAKO set screws. Precision ground stock, rolled threads. Close tolerance socket depth and outside diameter.

Reliability like this comes first at SPS. Write for literature on the Setomatic and how it automated the set screw.



UNITED STATES



CANADA



where reliability replaces probability



GREAT BRITAIN



EUROP

STANDARD PRESSED STEEL Co., Jenkintown, Pa., Santa Ana, Calif. • The Cleveland Cap Screw Company, Cleveland, O. • Columbia Steel Equipment Div., Fort Washington, Pa. • International Electronic Industries, Inc., Nashville, Tenn. • National Machine Products Div., Utica, Mich. • Standco Canada, Ltd., Toronto, Canada • Unbrako Socket Screw Co., Ltd., Coventry and Unbrako Steel Co., Limited, Sheffield, England • Unbrako Schrauben G.m.b.H., Dusseldorf and Koblenz, W. Germany.

Office Equipment and Supplies

What About Copying Equipment

By John R. Tackaberry

THE VAST INCREASE in the flood of paper work, particularly in purchasing departments, has made the use of reproduction equipment almost indispensable.

Every day thousands of purchasing agents are faced with the question of buying, replacing or altering photocopy, offset duplication, or microfilming equipment.

The question is not an easy one to answer. The increasing number of new and improved types of reproducing equipment which are literally flooding the market has not helped the purchaser in determining what type of equipment he needs.

A purchasing agent contemplating a new installation should not think in terms of equipment if he is to get full value. Rather, he must think in terms of what piece of equipment would best fit in with his operations and personnel. He must think in terms of orderly flow of information. The system is the thing.

How well a piece of equipment fits into a given system is more important than the fact that a wonderful new machine is currently available. As a matter of fact, old equipment can oftentimes be converted to new uses.

In surveying the history of the sales of reproduction equipment during the past 50 years, it has been found that the most successful purchases and the happiest customers resulted because the buyer took into consideration these fundamental factors:

- A proper evaluation of the problem involved.
- The right approach to the use of the equipment.
 - · Economic factors.
 - Service and maintenance.

The purchaser has to consider not only present needs but also the potential. He has to decide whether or not to start planning now for expansion or whether his output will remain at a fairly stable level for a reasonable length of time.

What Type of Reproduction

Another point that has to be settled: the type and quality of reproduction desired. Is permanence of copy important? Or, is the primary aim to get as many copies as quickly as possible at the lowest possible cost? The answer will determine what type of reproduction equipment is necessary. Photocopy is one type. Such diverse processes as diazo, facsimile, verifax, xerography or thermography are also available.

A photocopy machine will make high quality negatives and positives, as well as translucencies for diazo process. It is sensitive to a wide range of colors. With a predetermined cycle it can make about 400 prints from one original in one hour.

A diazo machine can make up to 800 copies an hour, but the originals must be translucent and one-sided.

Facsimile is used mostly for wire communication but is coming into greater use for stencil cutting.

Thermography copiers are fast but they are not equally sensitive to different kinds of ink.

Xerography utilizes various kinds of paper and film and is also sensitive to a wide range of colors.

Offset duplicating can be used to make a large number of copies in a very short time (up to 10,000 an hour), at a relatively low cost per copy.

Microfilming involves several entirely different considerations. The main advantages are security and space economy. Another plus factor is convenience.

Security does not necessarily mean storing film in metal canisters in bombproof vaults. Many manufacturing firms, dependent on engineering drawings and blueprints, avoid the risk of deterioration of originals by filming them and making copies when needed.

Consider All Costs

Cost of reproduction equipment does not mean only the capital outlay alone. It also includes work hours required for operation and maintenance, space requirements, supplies, and overhead.

The quality of copies is also a factor. It may not be merely a matter of individual preference; the use to which copy will be put will have a bearing on the quality needed.

In considering economic aspects, costs of present operation practices must, of course, be compared with anticipated outlay for new equipment, supplies operation, and maintenance.

Get Regular Maintenance

A fact that many overlook is that the best of equipment needs regular maintenance. Aside from the routine inspection for performance, it is advisable to make periodic check-ups to be sure the equipment is capable of doing the best job possible under new conditions as they arise.

It is of the greatest importance to get equipment from manufacturers that maintain adequate and experienced service organizations and have a reputation for quick, dependable service. Good equipment is only as good as the service behind it.

Mr. Tackaberry is systems and products manager of the Photostat Corporation, Rochester, N. Y.



OF A BUTTON your phone becomes an <u>intercom</u>

Here's real versatility. Just press a button and your office phone becomes an intercommunicating system. This ultra-modern Bell System intercom lets you:

TALK WITH OTHERS in your office, plant or store just by pushing a button or dialing.

HANDLE OUTSIDE as well as intercom calls on one phone. No extra equipment on your desk.

CONFER with as many as 6 persons at once, again just by pushing a button or dialing. ADD ANOTHER PERSON to an outside call, then stay on the line or get off, as you like.

The Bell System intercom will increase the efficiency and convenience of your telephone service—help you get more done, serve your customers better. Skilled Bell Telephone technicians will tailor it to your exact needs. No capital investment. No added cost for maintenance.

Get all the facts on how this new intercom service can improve your communications—profitably. Just call

your Bell Telephone business office and ask for a representative to visit you at your convenience. No obligation, of course.



New Call Director telephone provides as many as 30 push-buttons for maximum use of intercom service features.

BELL TELEPHONE SYSTEM





ONE RIBBON FOR ALL YOUR JOBS THERMOFAX AND MULTILITH PRICESSES PLUS ALL REGULAR JOBS

ONE SPOOL FOR MOST MACHINES

OUTLASTS OTHERS THREE TO ONE

THREE TIMES THE WEAR, ONE-THIRD THE RIBBON CHANGES

More important extras: Nu-Kote gives you clean, clear, printing press sharpness. Nu-Kote's red reproduces as clearly as its black in the Thermofax process. Made by the people who bring you Nu-Kote Carbon Paper, the extra long-lasting one with the plastic base. Available through authorized Burroughs M&V dealers. Or send coupon below. Dealer Sales Dept., Burroughs Corporation, Detroit 32, Michigan.



Buy where you see this sign *** NU-KOTE** *** CARBONS & RIBBONS ** a product of	*********************************** Dealer Sales Department Burroughs Corporation, Detroit 32, Michigan GENTLEMEN: Send me more information on the New Nu-Kote Typewriter Ribbon. Tell me the location of my nearest Burroughs M & V dealer.		
	NAME FIRM		
* Burroughs	ADDRESS	13	
* Corporation	CITY	ZONE	STATE

For More Information Write No. 236 on Place Mark Card-Page 32

Office Equipment



Finger-fitting, two-color tapered penholder has been designed by the Hanover Pen Company, Hanover, Pa. The new Speedball Steel Brush Pen comes in several sizes and is applicable to most forms of lettering.

Write No. 50 on Place Mark Card-Page 32

A ruler which measures distance in two directions is being distributed by Calmart International, 417 Amapola Lare, Los Angeles 24, Calif. A scale incorporated in a roller attachment shows the exact distance between lines to be drawn. It is particularly useful in form design and for engineering and layout men.

Write No. 51 on Place Mark Card-Page 32



New eight-channel wireless intercom has been announced by Feiler Engineering and Mfg. Co., 8026 N. Monticello Avenue, Skokie, Ill. Features of the system include: each message adjusted to come through at the same volume regardless of location of sending station, 10 times more power for clear transmission over greater distances, and an upfront static eliminator.

Write No. 52 on Place Mark Card-Page 32

■ One of the many extras that make GF office furniture so much better



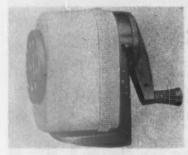
24 men must OK this GF desk before you can buy it!

Above you see the 24 inspectors and quality control people who must test and approve a single GF office desk. Every component...frame, drawers, top, fittings...must pass rigid inspection. Every process...forming, welding, brazing, painting...is checked

and rechecked against exacting quality standards. It's all part of our continuing effort to make *every* piece of GF office furniture serve you better, last longer. The General Fireproofing Company, Dept. Y-15, Youngstown 1, Ohio.



Office Equipment



Functional beauty and precision engineering are combined in the new plastic and metal mechanical pencil sharpener introduced recently by Sterling Plastics Company, 1140 Commerce Ave., Union, N. J. The cutter head is removable for cleaning and replacement.

Write No. 53 on Place Mark Card-Page 32

Universal typewriter ribbon to perform all typing jobs and fit nearly every make of typewriter without a special spool has been developed by Burroughs Corp., Detroit, Mich. It is a fabric ribbon that will record both black and red for ok correspondence as well as for offset and heat transfer duplicating processes. It will be sold only in 24 and 36-yard lengths. The usual ribbon length is 12 and 16 yards.

Write No. 54 on Place Mark Card—Page 32



Lock-in gauge is a feature of the new two-hole punch recently developed by Acco Products, Division of Natser Corp., Ogdensburg, N. Y. The gauge is adjustable for all standard paper sizes, and once locked, holes are punched in exactly the same position each time. The plastic tray at the base catches perforation cut-outs and is removable for emptying.

Write No. 55 on Place Mark Card-Page 32

Custom molded seat cushioning of new polyether foam is being produced by Urethane Corporation of America, subsidiary of American Excelsior Corp., 1000 N. Halsted St., Chicago 22, Ill. The new material is said to provide more luxurious comfort, greater stability, plus flexibility of use in office furniture.

Write No. 56 on Place Mark Card-Page 32

Brochure describing and listing user applications and prices for diffusion transfer photocopy papers and films has been prepared by Ampto, Inc., Newton, N. J. Included are descriptions and prices for over 20 different types of papers and films, and the variety of uses for each type. Write No. 57 on Place Mark Card—Page 32

KEEP INVENTORY
MESHING SMOOTHLY
WITH PRODUCTION

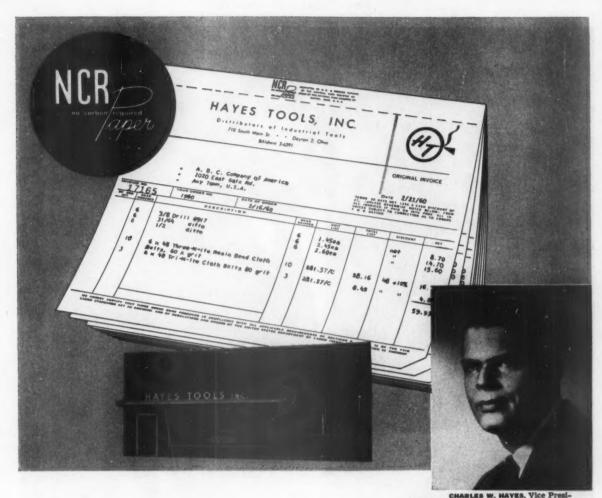
Acme Visible Cabinets give you inventory control at a glance

With an Acme Visible Control System on guard, there'll never be shortages in materials or equipment, or spare parts to interrupt the smooth flow of production. Inventory facts are at your fingertips. Visible signals flag your eye whenever an item needs reordering. For full facts on how you can control inventory this easy, efficient way... mail the coupon.

For More Information Write No. 238 on Place Mark Card-Page 32

ACME	VISIBLE
Acme Visible Records, In	C.,szos W. Aliview Dr., Crozet, Va.
To learn how my compr ciency—send free folder Central () Production (any can cut costs, incresse effi- s on systems for; () inventory Control
MAME	
POSITION	
COMPANY	
CITY	STATE

For a
Complete Report
on the
45th Annual
N.A.P.A. Convention
Don't miss
the
June 20th Issue
of
PURCHASING
Magazine



dent of Hayes Tools, Inc.

"NCR PAPER saves its entire cost several times each year."

- Hayes Tools, Inc., Dayton, Ohio

"We have been using NCR Paper (No Carbon Required) since its introduction to industry," writes Charles Hayes, Vice President of Hayes Tools, Inc. "It enables us to reduce costly duplication in paper work by eliminating the need for inserting and removing carbons. With NCR Paper, originals and copies are picked up as a complete unit.

"Our experience has proved the flexibility, convenience and economy

of NCR Paper. Our employees like it too, because NCR Paper forms are cleaner and easier to use.

"We estimate NCR Paper saves its entire cost several times each year through savings of time and effort."

Ch Hayer

It's the cost-in-use rather than the purchase price that determines the true cost of your multiple-copy forms. Invest in NCR Paper forms and get dividends through time saved and increased record-keeping efficiency for your business.

Vice President of Hayes Tools, Inc.

ASK YOUR LOCAL PRINTER OR FORMS SUPPLIER ABOUT NCR PAPER

Another Product of

THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio

NCR PAPER ELIMINATES CARBON PAPER

For More Information Write No. 239 on Place Mark Card-Page 32



Improve your list of suppliers with

Conover-Mast Purchasing Directory



With a good industrial directory you can be certain your company is buying from the best suppliers. By checking CMPD you eliminate the chance of overlooking important sources of supply.

CONOVER-MAST PURCHASING DIRECTORY offers great reliability. The addition of telephone numbers makes CMPD the most up-to-date buying directory published. Telephone numbers give you a convenience found in no other general industrial directory.

Because CMPD lists only products used by industry, you find the sources you want quickly and easily.

Conover-Mast Purchasing Directory

205 East 42nd Street . MUrray Hill 9-3250 . New York 17, N. Y.

PURCHASING



Hushed and Smooth Drawers, Doors ROLL ON NYLON In These H-O-N Products

Now, on H-O-N products, the drawers and doors move quietly on nylon rollers. Noise is greatly dampened; long wear is greatly increased. H-O-N has discovered the right nylon formula for the job.

Hushed drawers are an actual fact on the H-O-N Suspension file lines. A sturdy cradle moves on 10 nylon rollers to achieve quiet operation.



Hushed doors are an actual fact on H-O-N 30 and 48 series bookcases. Glass or steel you get finger tip quiet action with the nylon roller track.





Hushed drawers are an actual fact on H-O-N desks. Nylon rollers and vibration dampened pedestals assure quietness.



THE N.O.N CO., MUSCATINE, IOWA For More Information Write No. 240 on Place Mark Card—Page 32 JUNE 6, 1960

Office Equipment



Do-it-yourself kit permits easy installation of a built-in wall clock. It is being manufactured by Spartus Corp., 2110 W. Walnut St., Chicago, Ill. The kit contains a self-starting synchronous movement with plug and cord set, a wood face panel, hour indicators, hands and centerpiece. The wall becomes the "face" of the clock, and the diameter can be varied from 8 to 16 inches.

Write No. 58 on Place Mark Card-Page 32

Newest addition to Eberhard Faber's line of writing instruments is the Noblot Hevi-Write desk pen. It makes a broader, more vivid line than a regular point ball pen. The new pen has an extended writing tip and is finished in silver, set off by a tapered cone and cap in a color to match its ink.

Write No. 59 on Place Mark Card-Page 32



Record storage file that pops open for immediate use and folds flat for space-saving storage and reuse is being marketed by The Paige Company, 114 East 32 St., New York 17, N. Y. It is designed to be stored on shelving or stacked one on another. The new file is fabricated from a heavy corrugated board which forms a box within a box.

Write No. 60 on Place Mark Card-Page 32





Nobody's perfect—that's why they put erasers on pencils. Now-for the first time, a thinlead, non-smudge, fade-proof colored pencil that erases cleanly, easily, completely!

COLOR-TEX

Carebo-Weld

GENERAL'S

THIS IV VV

THE ONLY COLORED PENCIL OF ITS KIND

No more messy, shredded papers!
No more valuable working time
lost fighting to erase colored
pencil marks! With amazing,
new ERASABLE Color-Tex
you can erase color as easily as
you erase black lead pencil
marks. Only the color comes off!
No ghosts — no shredded paper!

TRY COLOR-TEX ERASABLE 10 DAYS FREE

See for yourself how General's special "Carbo-Weld" process makes Color-Tex stronger and stay sharp longer! See how much faster your accountants, book-keepers, secretaries work — once they're free from hard-to-erase, amudgy, colored pencils!

Available in Carmine Red or Indigo Blue — ask your dealer for General's New ERASABLE Color-Tex Pencils — or write today on your letterhead for FREE SAMPLES.

Medium or Hard Grades with or without erasers



For More Information Write No. 241 on Place Mark Card—Page 32

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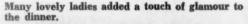


Through the eye of PURCHASING'S Camera

Record-Breaking Group Attends North Jersey Purchasing-Sales Dinner



The head table was filled with important purchasing personalities. Anne Repko, Austenal Laboratories and newly-elected director of the New York Association, was among the honored guests.





A man who is not afraid will look you straight in the eye. The men at this table proved their courage by looking squarely into the eye of the camera.

The good fellowship of the annual purchasing-sales dinner was very much in evidence at this table during the North Jersey event.

Photos: Courtesy North Jersey Bulletin

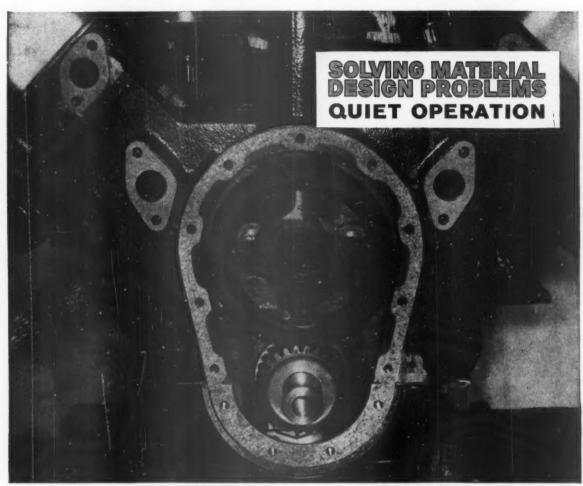


Irene Gordon, Wallace & Tiernan Incorporated, watches Don Williams, ITT Laboratories, check off arriving guests, while S. J. Bell, Viking Tool & Machinery Corp., backs him up. Mr. Williams was chairman of the successful dinner.





PURCHASING



Timing gears made of CDF Celeren will not pick up and amplify sound due to Celeren's naturally low tone frequency. Tests show that Celeren gears reduce noise by up to 50% compared to all-metal gear sets!

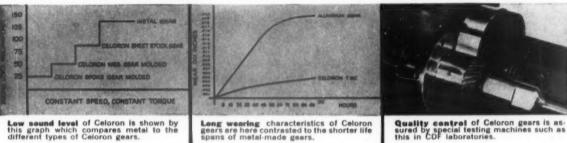
Made of quality controlled, fabric reinforced phenolic resin, Celoron® high-impact gears are constantly replacing metal in critical areas ranging from earth-moving machinery to compact cars to movie projectors.

Celoron molded materials are only one family of products from industry's largest selection of non-metallic structural and electrical materials . . . including thermosetting laminates, vulcanized fibre, silicone rubber, and mica.

This wide choice gives you every assurance of meeting your exact quality and cost needs in plastic material. Refer to Sweets PD file or write to us for the latest Celoron catalog.

CONTINENTAL-DIAMOND FIBRE

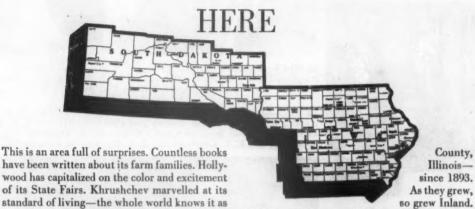




For More Information Write No. 242 on Place Mark Card-Page 32



INLAND STEEL



wood has capitalized on the color and excitement of its State Fairs. Khrushchev marvelled at its standard of living-the whole world knows it as one of the richest, most fertile areas on the face of the globe. But, what many do not know, is the dramatic industrial growth of this areaan amazing expansion of factories and products the value of which now actually exceeds that of its farm production!

Everywhere, one sees factory additions, huge new plants, great warehouses. From this land and its people come vast quantities of farm machinery and equipment-combines, corn pickers, planters, tillers, tractors, cribs, feeders and brooders. Great structural fabricating companies build bridges, homes, factories, skyscrapers. Famous-brand furnaces, food freezers, washing machines, dryers and home appliances go out to every state of the Union. Manufacturers of heavy duty industrial machinery, yard hoists, derricks, conveyors, pneumatic tools, lathes, graveling machines, road-building equipment, contribute to the wealth of the area and to our economy as a whole.

And everywhere, Inland Steel Company representatives find a hearty welcome. For Inland has served manufacturers in this area-Iowa, the southern half of South Dakota-and Rock Island The first orders ever received on Inland's books came from Iowa! Today, the original two Iowa customers, now significantly greater in size, continue their customer relationship with Inland.

Here, Inland men called regularly on every

customer, large and small-maintained close

personal relationships throughout the years

in times of plenty as well as in times of short

Yes, Inland Steel is here. Here, because Inland enjoys the friendship of the people of this territory and the mutual respect that has developed over the years. Here, because here, is a vital part of Inland's future, too.

INLAND STEEL COMPANY

30 West Monroe Street

supply.

Chicago 3, Illinois

County,

Illinois-

Sales Offices: Chicago • Davenport • Detroit . Houston • Indisnapolis Kansas City • Milwaukee • New York • St. Louis • St. Paul

Other Members of the Inland Family Joseph T. Ryerson & Son, Inc. Inland Steel Products Company Inland Steel Container Company* Inland Lime & Stone Company*



Inland's Annual Report is now ready. For your copy, write to Dept. 105.

66 years of service to the Industrial Middle West

For More Information Write No. 243 on Place Mark Card-Page 32

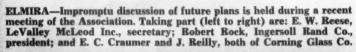
Association News



Through the eye of PURCHASING'S Camera



ELMIRA—Treasurer James Kellogg (r.), Kennedy Valve Co. shows the Association's financial statement to Ralph Baker (l.), Corning Glass Co., and Carl Ramberg, Ingersoll Rand Co., during a recent meeting.





ALABAMA—New officers of the Association pose for their official photo. They are: (seated, left to right) Oscar M. Stagg, Birmingham Southern Railroad, first vice president; J. B. Harrington, Birmingham Paper Company, president; and C. Russell Keister, Rust Engineering Company, second vice president. Standing (left to right) are: C. E. Wiberg, City of Birmingham, national director; Richard Anderson, Southeastern Products Co., secretary; and Guy B. Cofield, Alabama Power Co., treasurer.





NORTHERN CALIFORNIA—Comparing notes before lunch are Darrel Thomas, of Associated Students of the University of California, and Katherine Delucchi, Oakland Unified School District.

NORTHERN CALIFORNIA—Frank Sutherland (center), Owens-Illinois Glass Co., was the principal speaker at a recent luncheon meeting of the Association. He is flanked by Gerritt Kane (left), California Packing Corp., and James Hahn, University of California Medical Center.



For More Information about ad on facing page Write No. 244 on Place Mark Card—pg. 32→ PURCHASING

THERE'S A REAL DIFFERENCE IN SAFETY-SWITCH SAFETYI

The real difference in safety . . . and the difference is very real . . . lies in switch performance under electrical load. You can spot this difference instantly when you compare the action of BullDog Vacu-Break® Safety Switches.

When you operate Vacu-Break Safety Switches under load, there is no blinding flash, no dangerous arc "explosion". The exclusive Vacu-Break design double-breaks the circuit, confines the arc within the enclosed switch head, smothers and extinguishes it instantly. Maintenance of contact points is virtually eliminated, and you don't have to open the switch-box door to know the contact is broken.

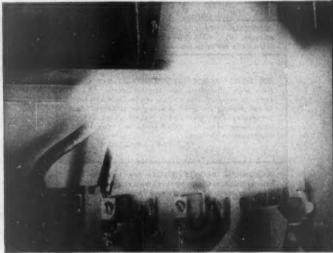
The operating handle is connected directly to the Vacu-Break heads. Push the handle "Off" and contact is broken positively every time. There are no toggles, triggers or springs to depend on. You know the switch is "Off" without looking.

Clampmatic® assembly gives clamped pressure contact, speeds "break". This means positive, safe operation, and long, trouble-free switch life. In safety switches, the real difference in safety lies in design and performance. Compare BullDog Vacu-Break Safety Switches with other types, and then see the difference!

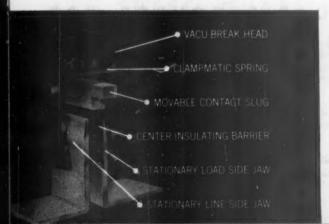
Unretouched photographs of the arc in 100-Amp 600-volt switches operating under 90-Amp 440-volt load with 40% to 50% power factor. Pictures taken at instant of break.



Vacu-Break Safety Switches confine dangerous, destructive arcs inside arc chambers, and smother them instantly.



Open knifeblade switches permit arc "explosions", burning and pitting contact points. The result—fire hazard and switch damage,



Cutaway of Vacu-Break switch head, showing movable contact slug inside arc-smothering closed chamber. Clampmatic spring assembly gives bolt-tight contact, speeds "break", increases switch life.

BullDog Electric Products Division, I-T-E Circuit Breaker Company, Box 177, Detroit 32, Michigan. In Canada: 80 Clayson Rd., Toronto, Ont. Export Division: 13 East 40th St., New York 16, N.Y.

For Safety's Sake-Buy Vacu-Break



BULLDOG ELECTRIC PRODUCTS DIVISION
1-T-E CIRCUIT BREAKER COMPANY

THESE 13 SPECIAL ALLOYS FROM can help you solve design problems . . .

As the result of the knowledge gained over the years by working closely with hundreds of customers in helping solve innumerable design and production problems, the Mueller Brass Co. has developed a series of special alloys for use in tough or unusual applications.

This group of special alloys, each having distinct characteristics and advantages, are available in rod form in many sizes and shapes as well as forgings.

CHARACTERISTICS AND APPLICATIONS	NO.	NAME	TEMPER
	2248-30	"Tul-Stuf" Aluminum Branse	BRINELL 1000 KG lead 165
TUF-STUP® ALUMINUM BRONZES AND NICKEL ALU- MINUM BRONZES have great strength characteristics.	2245-75	"Tuf-Stuf" Aluminum Brenze	1000 KG load
All are more resistant to correction creating under load than copporatine alloys and, in addition, some are head-treetable. They can withstand heavy pounding and have proved excellent for such parts as gibs.	224C	"Tuf-Stuf" Aluminum Brenze	BRINELL 1000 KG load 185
cams, valve seet inserts, shifting forks and propeller hub cones.	224H	"Tuf-Stuf" Aluminum Bronzo	BRINELL 1000 KG lose 200
	224K	"Tul-Stul" Nickel Aluminum Bronzo	BRINELL 3000 KG look 250
ALUMINUM SILICON RRONZE is free turning; has high strength, in iteraction recisions and non-magnetic and resistant to correcton cracking under load.	802	Aluminum Silicon Brazza	ROCKWELL-8
400 SERIES® FORGEABLE BEARING ALLOYS range from high strength to low loaded ductile. All are correction resistant, free cutting, can be used with hard or soft making members and can be soldered. They	600	Forgoable Boaring Alley	ROCKWELL-E
	601	Forgoable Boaring Alley	ROCKWELL-
	602	Londod Forgonble Boarlag Allay	ROCKWELL-I
are employed in a great variety of applications ranging from pump goers and valve stems to pinion shafts and transmission rings.	604	High London Forgouble Boaring Alley:	ROCKWELL-1
	605	Low Loaded Forgosbie Searing Alley	ROCKWELL-I
MANGANESE BRONZE ALLOYS are exceptionally	241A	Manganece Brenze A	ROCKWELL-R
strong, tough, resistant to shock and correction. Good for screw muchine products and forgings for aircraft parts.	721	Manganese Bronze High Totalia Grado S	BRINELL 1000 KG lead 200
TELLURIUM COPPER has very high electrical and thermal canductivity combined with good correcton realistance and machinability. Excellent for electronic components	799	Tellurium Copper	ROCKWELL-E

NOTE: The values shown are average values normally obtained in practice. Variations must be expected in practice. The values should be used as a general guide rather than the basis for specifications.

ONE DEPENDABLE SOURCE FOR



COLD-PREST® IMPACT EXTRUSIONS



SINTEEL® POWDERED METAL PARTS



FORMED COPPER TUBE

MUELLER BRASS CO.

THE MUELLER BRASS CO. lower costs and improve your products

Mueller Brass Co. engineers and metallurgists are always ready to assist in the selection of the proper alloy for your particular product.

Regardless of your responsibility...design, specification, production or purchasing... Mueller Brass Co. special alloys can help you lower costs and improve your products. Call the "Man From Mueller Brass Co." today and put these remarkable alloys to work on your toughest jobs.

Yield Strength at 0.5% Extension Lhs./Sq. in.	Tensile Strength Lbs./Sq. In.	Relative Machinability Free Cutting Bruss=100%	
80,000	82,000	30	
45,000	100,000	20	The The
62,000	95,000	35	HIGH STRENGTH FORGINGS
70,000	90,000	30	
65,000	105,000	20	TA AFA
35,000	85,000	40	
60,000	90,000	25	
85,000	78,000	35	The state of the s
45,000	85,000	45	Special Company
\$5,000	75,000	80	
45,000	70,000	35	ROD SHAPES FOR ECREW MACHINE PRODUCTS
55,000	78,000	25	SPECIAL ALLEYS
68,000	115,000	35	For further information on those allays write today for Special Allays Kit No. 12. Engineering information on other
40,000	43,000	90	tehricated products in also available ploase specify the seemed you desire.

ALL THESE QUALITY PRODUCTS



SAND CASTINGS



CUSTOM EXTRUDED PLASTIC SHAPES AND INJECTION MOLDINGS

PORT HURON 30, MICHIGAN

For More Information Write No. 245 on Place Mark Card-Page 32



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JUNE 6, 1960

147

Dayton P.A.'s Are Told

How to Sell a Vasco Program

MEMBERS of the Dayton Purchasing Agents Association were recently shown a point-by-point plan on how to get a value analysis-standardization program started in their companies.

Dwight L. Barger, Joy Manufacturing Company, New Philadelphia, Ohio, outlined the plan at a regular monthly meeting of the association. Mr. Barger began his presentation by cautioning everyone against hiring an analyst and letting him wander around among the engineers, production men, and sales people searching for ideas on which to begin work.

"No one knows," he said, "how many programs have failed in this manner. There have been quite a few reported and I'm sure there are many more that have not been reported. Any attempt by the purchasing agent to revive the program is then almost useless."

As a successful alternate, the Ohio purchasing executive proposed that a meeting be called by management with one representative from these departments: engineering, production, industrial engineering, sales, development, and purchasing. Its purpose should be to review the advantages of cost reduction through a value

analysis-standardization program. The explanation should be given by the purchasing agent who generally will also serve as the chairman.

"The purchasing agent," Barger added, "must present the program in such a way as to convince the committee that it is worthwhile and make each member want to take an active part in its development."

Mr. Barger recommended the following guide, and stated that it has been used quite successfully in other companies:

• Start by raising this question "How can we give our customers more value for their money?" This is a basic problem facing most companies. Building better products at lower cost is simply a matter of company survival in today's competitive market.

 Use a blackboard and write across the top in large letters "Profit and Loss Statement." Then present this hypothetical annual statement:

 Sales
 \$50,000,000

 Material Costs, Labor
 45,000,000

 Profit
 \$5,000,000

A \$10 million increase in this company's sales would cause top management to unroll the "plush red carpet" for all salesmen. Yet, a \$1 million reduction in the cost of purchased goods would have the same net result on the profit of the company. In both instances,

(Please turn to page 150)
For More Information about ad on following page
Write No. 246 on Place Mark Card—pg. 32→
PURCHASING

How Purchasing Boosts Profits

XYZ Company

Sales—\$50,000,000 • Operating Costs—\$45,000,000

Profit-\$5,000,000

EXAMP	LE A	EXAMPLE B								
Sales	\$60,000,000	Sales	\$50,000,000							
Operating Costs (Material, Labor, Burden)	\$54,000,000	Operating Costs (Material, Labor, Burden)	\$44,000,000							
Profit	\$ 6,000,000	Profit	\$ 6,000,000							

This hypothetical example shows that a \$1 million reduction in operating costs boosts profits just as much as a \$10 million increase in sales. Purchased material costs is one of the best areas to tackle in reducing operating costs.

GEARS FOR EVERY PURPOSE

Throughout the world—wherever gears are used—ILLINOIS GEARS have a matchless reputation for dependability and superiority that is constantly being proven by their performance in such equipment as this mammath Kolbe Wheel Excavator designed by the United Electric Coal Companies.

One can well imagine the enormity of engineering work required to design and build this giant earth mover and the responsibility of the components which include numerous ILLINOIS GEARS, in assuring its successful operation.

If you want gears that are made right, with quality as the first consideration, specify and buy ILLINOIS GEARS. Ask for full information today. Machining the large spur gear for driving the digging wheel of the huge Kelbe Exceveror.

It takes 3500 cubic yards of earth an hour to satisfy the powerful appetite of this Kolbe Wheel Excavater which is clearing the overburden from a coal strip near Canton, Illinois.

Look for this mark . . . the symbol on finer gear



Gears for Every Purpose ... one gear or 10,000 or more

ILLINOIS GEAR & MACHINE COMPANY

2108 NORTH NATCHEZ AVENUE

CHICAGO 35, ILLINOIS



Don't take our word for it—try a new Primits Flaring Tool!
See if you don't get smoother, stronger, more uniform flares
. . . in less time and with less effort than ever before!

Then, compare this new Prize Flaring Tool, feature-by-feature, with any flaring tool you've ever seen or owned:

 Feed releases automatically when flare is fully formed. ◆
 Reversing feed screw burnishes flare. ◆ Hardened steel die bars turns easily. Precision-ground. hardened steel flaring cone, eccentrically mounted in precision bearings, produces rolling action for even metal flow . . . gives uniform flare walls without galling. . Tubing hole sizes are clearly marked. • Easy sliding rugged malleable yoke serves as stop for tubing to give correct flare size. • Yoke clamp screw fits into centering hole . . . locks bars, yoke and tubing into perfect alignment. • Stop pins keep yoke on die bars at all times . . . yoke can't slide off.

3 Models: RIBBID No. 457 for 45° flores, '%" to %" O.D. (7 sizes)
RIBBID No. 459 for 45° flores, '%" to %" O.D. (9 sizes)
RIBBID No. 376 for 37° flores, '%" to %" O.D. (6 sizes)

See and try these new RIBBID Flating Tools. Your Supply House has them.

RICOID Work-Saver Pipe Tools



Association News

(Continued from page 148) profits would be increased to \$6 million.

 At this point, you are ready to point out the scope and limitations of the purchasing functions for reducing materials cost. They are:

Competitive quotations — The securing of competitive quotations is a normal every-day function of the purchasing department. These savings do not appear on the profit and loss statement because the accountants start keeping records where the purchasing function stops. The lowest price (cost) is used for calculating profit.

Purchasing Research—This is a comparatively new cost reduction tool. It is used primarily by those companies where, by the nature of their operations, they cannot use a value analysis program.

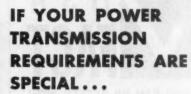
Negotiated Purchases — Many times a negotiated purchase will result in lower cost. This is a buying function carried on by most purchasing departments. Savings will, in most cases, be reflected on the profit and loss statement.

Value Analysis-Standardization
—At this point, show the film
strip prepared by the National
Association of Purchasing Agents.
Review the film and define the
proposed program as one designed to examine all component
parts of a product to determine
their usefulness. It enables the
plant to reduce material costs
without sacrificing material content. It means the proper purchase price is the lowest price
that can reliably supply all of
the value needed.

Mr. Barger stressed that the first meeting of the committee should be an educational and organizational meeting. It is the second "get-together" at which the first items to be studies are presented.

"The committee approach," he concluded, "has made it possible for a larger number of companies to get a program started. Thus, the way is paved for the day when the program has grown to a size which requires a full-time, experienced, qualified analyst."

"Only one outfit can handle this...
Phillie Gear!"





This multi shaft reducer is a typical example of the special problems we can solve. Specifically, it was designed to drive film tensioning and take-up rolls. A single input shaft operates all the output shafts.



Radar drives are another example. In this case the gears were hardened and precision ground to provide the high degree of accuracy needed for precise positioning of the radar antennae. The primary requirement was minimum backlash and uniform backlash, combined with maximum rigidity. To solve your special drive problem and to give your product a years-ahead competitive edge, let us know your requirements. Our engineering staff will be glad to work with you.

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Association News

Dallas Group Elects New Slate of Officers

Harold M. Stockton, Dallas Power & Light Company, has been elected president of the Purchasing Agents Association of Dallas.

Other officers elected at the annual meeting are: first vice president, D. Ray Langford, Sun Oil Company; second vice president, C. M. Newsom, Southern Union Gas Company; secretary-treasurer, Fred D. Bradley, Southern Union Gas Company; national director, Paul Talley, Mobil Oil Company; and alternate national director, John M. Morris, Lone Star Steel Company.

"Professional" Approach Denounced At N.Y. Assn.

Harry J. Moore, director of purchasing at IBM, speaking at a recent forum sponsored by the Purchasing Agents Association of New York, described "purchasing professional sm" as one of the major roadblocks to cost reduction and purchasing advance generally. Also on the panel was Paul V. Farrell, editor of PURCHASING.



Harry J. Moore

Mr. Moore defined professionalism as that attitude which is overly concerned with the immediate, internal matters of purchasing and does not try to see the viewpoint of management or

(Please turn to page 154)



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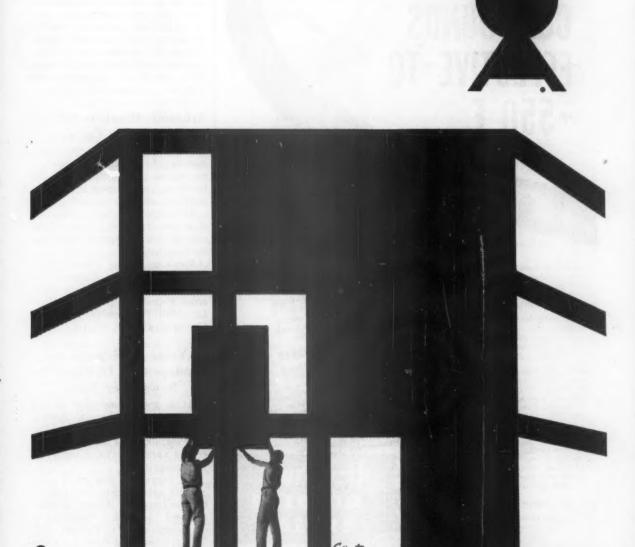


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PURCHASING

How Olin Aluminum helps to transform concept into construction

Today, aluminum is pacing a creative upsurge in architecture and construction. Its myriad alloys, finishes and uses are springboards for advanced construction techniques... for dazzling design departures. Architects, designers, engineers and builders find that Olin Aluminum helps them realize aluminum's potentialities more fully. They're tapping our reserves of complete, up-to-the-minute metallurgical information. We aid them in turning design objectives into aluminum sheet, extrusions and structurals. As in construction...so in your industry. Work with Olin Aluminum and you'll find us a creative
PLIN minded, fast-moving source of quality materials. Look for your local R representative in LUMINUM the Yellow Pages. And for valuable data, send for our booklet: Aluminum in Architecture.



For More Information Write No. 251 on Place Mark Card-Page 32



For More Information Write No. 252 on Place Mark Card-Page 32

Association News

(Continued from page 152)

other departments. Another of its faults, he said, is a lack of familiarity with the vendors from whom purchasing buys, or with the industries they represent. These are bottlenecks which can be overcome only with a broad, managerial attitude.

Considering that value analysis was described over 12 years ago, Mr. Farrell said, the fact that it is only now coming into use shows that cost reduction in industry is still dragging its feet. Much of this is due to roadblocks outside purchasing: in management itself, in engineering, and in sales. These can be avoided by giving the cost reduction responsibility to people who are respected, well-known in the company, and have wide experience with its products.

Arkansas Members Discuss **Purchasing Careers**

The Purchasing Agents Association of Arkansas devoted recent meeting to short talks by members on the most interesting purchase of their career.

The program was under the direction of Jerrell Glover, chairman of the professional development committee.

Speakers were: Elmer Holshouser, Aluminum Company of America; Hugh McMillan, Arkansas Foundry; and Ed Tinnell of Lion Oil Division of Monsanto Chemical Co.

Value of Reports to **Management Outlined to** Newspaper Execs

At a recent meeting of the Newspaper Purchasing Executives Assn., Eugene Parrish of the St. Petersburg (Fla.) Times discussed various ways of reporting to management.

He suggested that more purchasing agents take advantage of this easy manner of keeping management advised. "Reports to management," Mr. Parrish said, "are not new, but there are some of us that are not following through with such reports.

"Reports prepared by a purchasing executive are of equal importance with reports submitted by other department heads."

The Florida executive called attention to the recognition of purchasing as an authority on market conditions, price trends, and general economic and competitive conditions. For this reason, his reports may well affect the profit picture.

Mr. Parrish said that reports to management were "one of the most efficient tools" that is available to purchasing. It builds better relations with management and helps to achieve recognition for the many achievements pro-

"Management is entitled to reports, "he told his audience. "They should receive information regarding immediate or imminent cost increases or decreases of these materials, and also information relating to new materials and

processes which can reduce pro-

duction costs."

duced in purchasing.

Mr. Parrish concluded by saying, "It has been established that the purchasing profession has come a long way since the old days when it was a mere job for any individual to obtain a few competitive bids and sign a purchase order for the low bidder, and I firmly believe that reports have played a definite part in bringing the purchasing profession to reality."

National President Visits St. Paul

Continuing his visits to local associations, T. O. English, Alcoa, president of the National Association of Purchasing Agents, was a welcome guest at a recent meeting of Twin City Association of Purchasing Agents in St. Paul, Minn.

The topic of his talk was, "Policy and Human Chemistry." The audience of purchasing agents was swelled by the numerous other top executives who came out to hear Mr. English.

The first part of the program was devoted to a slide-film presentation on, "Value Analysis-Standardization-The Upen Door To Increased Profits."





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News

Sharp Rise Seen For Bituminous Coal Demand

"Demand for bituminous coal will reach 600-700 million tons annually within the next 10 to 15 years," says R. E. Salvati, president of Island Creek Coal Company.

Speaking to the East-Central District members of the American Institute of Electrical Engineers, Mr. Salvati urged large consumers of coal—especially electric utilities—to join the industry in planning capacities to meet this demand. "The future coal supply," he says, "can be assured only by concerning yourselves with the problem and, working jointly with us, devising the most beneficial solution."

One solution he suggested was "a combination of the long-term coal contract, backed up with dedicated coal reserves and volume movement agreements with the railroads. Such a combination represents the type of big thinking required for the big job ahead."

He told the group that "the coal industry has a 500 million-ton capacity competing momentarily in a 425 million-ton market. Consumers are engaged in hand-to mouth buying and pitting one supplier against the other in the interest of lower prices with no evidenced concern that they are buying much of their coal supplies well below cost—thereby stifling the replacement and expansion on which they must so heavily rely in the future."

Urge Standard Designs For Capital Equipment

Purchasing agents have been urged to consider standard designs for capital equipment in order to cut costs.

Walter B. Riley, vice president of Boiler Engineering & Supply Co., says "some thought should be given by buyers and sellers alike to the need for real or fancied special designs and constructions in generally accepted standard capital equipment. Some

(Please turn to page 158)

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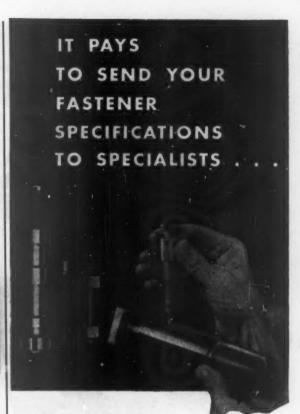
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157



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THE 52100 HOUSE

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News

(Continued from page 156)

of the extra charges for special equipment, he notes, are caused by special estimates and instructions, engineering drawing changes, no quantity buying, special tools, and the departure from normal manufacturing routines.

Mr. Riley says that specials are uneconomical for everyone—the P.A., the distributor, and the manufacturer. The cost and selling price of standard equipment, he observes, are adversely affected by excessive costs of specially built equipment which must be absorbed in general overhead.

He adds that "any departure from standard design and constrution increases delivery time as well as cost. Regardless of time and money spent in expediting, no reasonably rapid delivery of specials can be forecast with any reasonable degree of assurance."

25% of Families Earned Between \$4-6000 in '59

One-quarter of the nation's families and single persons had incomes of between \$4000 and \$6000 last year, reports the Department of Commerce.

During 1959, 55½ million families (including unattached individuals) received \$362 billion in personal income. Just over 1/3 of the families had income under \$4000, while 2/5 received more than \$6000.

The Commerce Department's Office of Business Economics cites three measures of average income. Modal income—estimated at about \$4600— represents the most frequently found figure. Median income—which was \$5300—divides the distribution in the middle, so that half of the consumer units made less than this amount and half made more. And mean income—listed at \$6520—is obtained by dividing total personal income by the number of families.

Advantages of Leasing Described in Booklet

A new booklet titled "Leasing Releases Working Capital" has been issued by Acme Associates,

The brochure describes how industrial leasing of plant facilities and equipment produces profits and permits early modernization programs. It shows how many companies conserved working capital while preventing dilution of ownership.

G. F. Walters, chairman of Acme, says that purchasing agents who fail to take advantage of leasing may find their companies lagging behind the demands of growth or the need to avoid obsolescence. At the same time, he says, they pay "a penalty through ownership of equipment which must later be replaced by new equipment at highly inflated prices."

The booklet explains how leases can be tailored to varying lengths of time. It outlines how the equipment is purchased by the leasing company to the order of the firm needing it, including all dealer or manufacturer guarantees, warrantees, and services.

The brochure is available free of charge from Acme, 321 Palmolive Building, Chicago 11, Ill.

See Inventory Building By P.A.'s Completed

"The steel market in the second quarter has become highly competitive and inventory rebu'lding has now been largely completed," says Jack L. Ashby, president of Kaiser Steel Corporation.

Mr. Ashby notes that "current shipments are at a lower rate than in the first quarter." But he adds that "recent favorable developments in the pipeline field point up the possibility of a major increase in demand for large diameter steel pipe, one of Kaiser Steel's primary products."

The company's sales for the first three months rose almost \$4,000.-000 to \$64,933,000—a first quarter record. Ashby says that this performance was aided by:

 Purchasing agents were rebuilding their inventories following the strike.

(2) The steel market was generally strong.

(3) Expanded facilities made increased production possible.





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Industry

The Radio Corporation of America announced today it had entered the magnetic tape manufacturing field and was producing tape for commercial, professional and home recording use at a new Indianapolis plant. Production will be a part of the RCA Victor Record Division's activities. Already in operation, the Indianapolis plant will produce two billion feet of tape during its first year.

Keasbey & Mattisor Company's new asbestos-cement pipe plant, at Hillsboro, Texas, will be completed by Fall 1961. The Austin Company, Houston, Texas, is the designer and builder. The new plant will cover 3-acres under roof on a 50-acre site. It will be



steel-frame, single-story, flat-roof construction with sidewalls of brick and K&M Corrugated Asbestos. The factory will manufacture asbestos-cement pressure pipe, irrigation pipe, sewer pipe, and other forms of pipe products for a rapidly expanding Southwest market.

Commercial production of the two coldest substances known to man, liquid Helium and liquid Hydrogen, will begin next month on the East Coast. Air products, Inc., Allentown, Pa. is presently installing on ultra-low-temperature plant at Iselin, N. J. The company, which has built and operates almost all of the government's liquid Hydrogen and liquid Oxygen facilities, will soon complete this plant for commercial distribution.

Both products will be delivered by truck in specially designed vacuum-insulated containers throughout an area of a 600

mile radius. Shipments are also planned by air freight aver a much larger area. The plant will produce liquid Helium at —452°F., about 8 degrees above absolute zero, liquid Hydrogen at —423°F.

Formation of Bonmar Metal Products Corp., Jerome Avenue, Lyndhurst, New Jersey, an aluminum and steel continuous coating processing facility has been announced. The plant opening is scheduled for April.

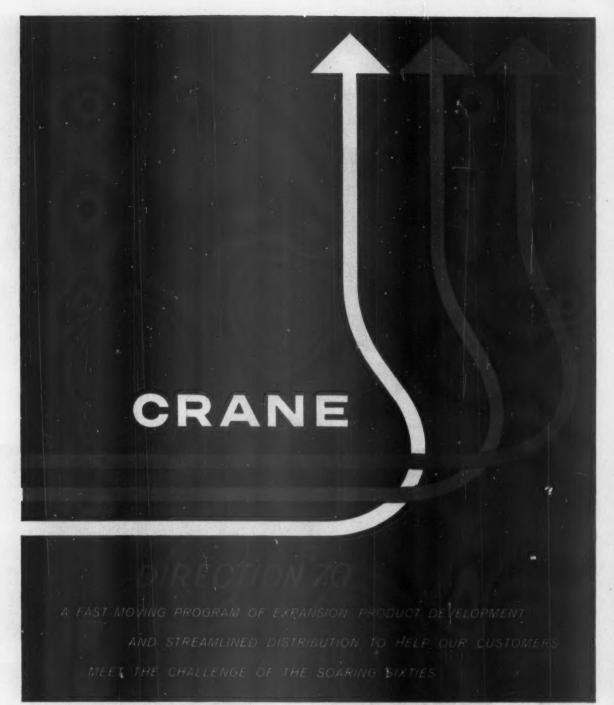
The Bonmar plant covers 30,000 square feet in a one-story building incorporating office, production and research areas. The company will apply especially formulated finishes in a continuous process to steel and aluminum in a wide variety of widths and gauges to meet specific production requirements.

To handle its increasing West Coast business, E. F. Houghton & Co. has opened a new plant at 54 Tanforan Avenue, South San Francisco. Industrial oils and chemicals formerly manufactured at Houghton's plant at 1500 Davidson Avenue, San Francisco, are now being supplied from the new facility.



Equipment newly installed includes provision for sulphonation, saponification, compounding, esterification and condensation reactions. Capacity has been increased more than 50% over the former plant.

The new plant is located on a three-acre plot and includes 30,000 sq. feet of manufacturing space, a new office building, control laboratory and 10,000 sq. ft. of outdoor storage area.



The Soaring Sixties have begun. This is the decade to be marked by accelerated industrial growth. By 1970, predictions are that...

- machinery production will double
- petroleum production will increase 4% to 5% each year
- chemicals are to double their present output at the current compound growth rate
- \bullet food processing will rise nearly 40%, paper and allied industries will expand about 60%

Total industrial production is estimated to rise some 60%

in the next ten years. Looking at it another way, the prospective increase in manufacturing and mining is almost as large as the total output of just 12 years ago.

Crane announces Direction '70... new products to help industry meet the challenge of the Soaring Sixties. These are products to improve quality control. These are products to increase production. These are products to help you control your costs. On the following pages is the first... the most significant Gate Valve improvement in 25 years. It's the first announcement of many you'll be seeing from Crane in Direction '70.

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CRANE FLEX GATES*

a new line of 150- and 300-pound steel valves

FLEXIBILITY PROVIDES THESE BENEFITS

BECAUSE THEY'RE FLEXIBLE, new Crane Flex Gates seat with less torque.

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BECAUŞE THEY'RE FLEXIBLE, new Crane Flex Gates are tight on inlet seat and outlet seat over a wide range of pressures.

BECAUSE THEY'RE FLEXIBLE, new Crane Flex Gates can be used singly in some services where two conventional gate valves are frequently specified. You can save substantially on piping costs. And they have been exhaustively field tested.

BECAUSE THEY'RE FLEXIBLE, new Crane Flex Gates can be serviced—body seat rings replaced or seating faces refinished—quickly without painstaking accuracy. Slightly off-taper seats do not affect tightness or operating ease.

BECAUSE THEY'RE FLEXIBLE, new Crane Flex Gates will easily outperform any conventional solid wedge disc valve you now use. And there's no increase in price.

BECAUSE THEY'RE MADE BY CRANE, these new Flex Gates are completely dependable. You can use them with complete confidence on steam, water, gas, oil or oil vapor service. Stem and disc seating faces are Crane Exelloy. Shoulder-type body seat rings are Exelloy or Crane No. 49 Nickel Alloy. Sizes 12 inch and smaller; 150- and 300-pound pressure classes.

Ask your nearby Crane Distributor for full information on Flex Gates—and for data whenever you work with the products Crane makes. He has the newest in information and products. Crane Co., Industrial Products Group, 4100 South Kedzie Avenue, Chicago 32, Illinois.



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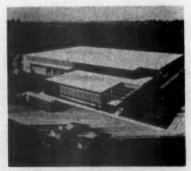
Industry

A continuous fluoroscoping process which reveals any hidden flaws or defects in the welded seams of steel pipe has been developed by National Tube Division of United States Steel for further quality control.



The process is being used at National Works, McKeesport, Pa., to inspect welds on the large diameter electric welded pipe produced for oil and gas transmission lines. Pipe welds formerly were checked by X-ray, but only the end portions of each pipe section received this treatment. Even for this limited area, the X-ray in spection, which required placing and developing of film, was much slower.

A new office and warehouse for The Stanley Works in Atlanta, Georgia will house regional sales and warehouse operations of the hardware, steel strapping and



electric tool divisions of the company, and regional sales offices only for the Stanley-Judd drapery hardware division.

How the Court Views Tie-in Sales

(Continued from page 88)

exceptions to the antitrust laws which Congress has not sanctioned."

In a famous dissent, three members of the Supreme Court described the impossible consequences which could result from the enforcement of tie-in contracts. The decision (since overruled) had upheld an agreement to sell ink with a patented mimeograph machine.

"Take a patentee selling a patented engine," the dissenting members said. "He will now have the right by contract to bring under the patent laws all contracts for coal or electrical energy used to afford power to work the machine, or even the lubricants employed in its operation.

Power Is Recognized

"Take a patented carpenter's plane. The power now exists in the patentee by contract to validly confine a carpenter purchasing one of these planes to the use of lumber sawed from trees grown on the land of a particular person or sawed by a particular mill.

"Take a patented cooking utensil. The power is now recognized in the patentee to bind by contract one who buys the utensil to use in connection with it no other supplies than those sold or made by the patentee.

"Take the invention of a patented window frame. It is now the law that the seller of the frame may stipulate that no other material shall be used in a house in which the window frames are placed except such as may be bought from the patentee and seller of the frame.

"Take an illustration which goes home to everyone—a patented sewing machine. It is now established that by putting on the machine, in addition to the notice of patent required by law a notice called a license restriction, the right is acquired against the whole world to control the purchase by users of the machine of thread, needles and all lubricants or other materials convenient or necessary for operation of the machine.

► END

COTTON* Improves Sanitation in new \$2,000,000 plant



• The Lovable Brassiere Company, Atlanta, Georgia, believes strongly in maintaining the best working conditions possible for its employees. Spending \$2,000,000 on a new plant last year, this 35 year old manufacturer included cotton toweling as one of the "must" conveniences for its 1,000 plant and office personnel.

Cotton toweling, management finds, contributes to morale by assuring higher sanitation conditions. Washrooms stay neater, there's no litter to cause dangerous fire hazard. And, cotton speeds up washroom traffic, is easier to service, saves on maintenance costs. Why not find out about cotton towels and toweling for *your* business. Write for free booklet to Fairfax, Dept. S-6 111 West 40th Street, New York 18, N. Y.

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Sure Sign of Good Management

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WELLINGTON SEARS COMPANY, 111 WEST 40TH STREET, NEW YORK 18, N.Y.
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Book Reviews

Precision Measurements And Gaging Techniques

By William Grohe Chemical Publishing Co., Inc. \$7.50

As industry places greater emphasis on product reliability, the purchasing agent becomes increasingly concerned with quality control, as practiced both by his suppliers and in his own company's shop. This book will bring him up to date specifically on some of the measuring techniques now in use and which may already be an important part of the specifications on the purchase order.

In the first chapters, the author discusses in detail the gaging of screw threads and explains the types of threads in use. In subsequent pages, he moves from gage blocks and other mechanical devices to more sensitive techniques: electronic, pneumatic, and optical. Each method is de-

scribed step by step and the reader will find many informative illustrations.

Of particular interest to purchasing people is a list of manufacturers of each type of measuring equipment, which can serve as a useful buying guide.

Managing the Materials Function

American Management Association Management Report 35 \$3.75 (\$2.50 to AMA members)

Successful materials management requires skillful coordination of many activities. These generally include purchasing, production, planning and control, inventory control, materials handling, traffic, warehousing, and shipping.

In this report, successful materials managers with years of experience show how they have integrated these activities to achieve an effective materials function. They describe new tools and techniques for reducing costs and increasing efficiency.

This report is based on material originally presented at the AMA

conference on "Integrated Materials Management" which was held in New York City in March, 1959.

Value Added by Industrial Distributors

By Robert D. Buzzell Bureau of Business Research Ohio State University

\$3.50

The industrial distributor has an amazingly important role in our economy. Professor Buzzell has studied the operations of 126 leading industrial distributors and has analyzed their economic productivity. He finds that the value added by industrial distributors is 19.89% of gross sales. On this basis, "distributors of machinery, equipment and supplies . . . represent the most important single class of wholesaler in the American economy." This book contains interesting information for any purchasing agent interested in learning more about the operations of the industrial distributor on whom he depends so much.



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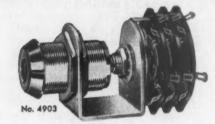
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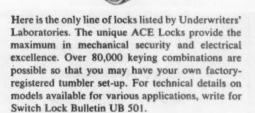


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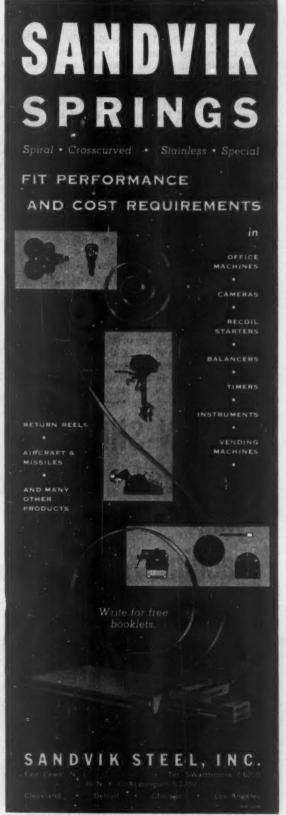


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Don't Pay Excess Freight Charges

(Continued from page 77)

Of course, it's illegal to intentionally describe an item incorrectly to obtain a lower freight rating. The penalty for this in interstate commerce is a fine of \$5000, imprisonment for two years, or both.

Trade Names-An article should never be described on the bill of lading by trade name, no matter how well known it is. For if the carrier's rate clerk cannot find the name in the classification, the shipper will probably be assessed extra

Weight Breakdowns-A basic rule of rating shipments is that whenever a weight breakdown is not furnished for each item, the entire shipment is rated at the highest rating that applies to any one article in the shipment. This principle is especially important for purchasing agents who receive two or more items from one supplier in a single shipment.

Since mistakes made by the shipper often result in greater revenues for the carrier, some P.A.'s wonder why railroads and truckers complain about classification errors. However, the carriers have many reasons to help buyers pay only the correct

amount.

Perhaps the most important is that when you pay excess freight charges, the carrier's good will -which he has carefully built up-is in jeopardy. If your shipment is described vaguely or incor-

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rectly, the carrier may lose your business in the future.

For a certain item may be rated one way by his rate clerk but at a lower rate by a competitor.

In addition most large carriers maintain a staff of freight bill auditors who verify the charges assessed. When they discover that a shipment is not described completely, they often have to write the shipper for further clarification.

Sometimes a great deal of correspondence is necessary to determine whether an overcharge or an undercharge is involved. Then the customer must either be billed for additional charges or issued a refund for the excess charge. With the increasing costs of skilled rate auditors and clerical workers, the expense of auditing and verification quickly eats into the carrier's profits.

As a purchasing agent, you are vitally interested in your freight charges, yet you probably do not have the training nor the time to become a traffic expert. Nevertheless, if your company is operating without a traffic department, you can still make

use of the fundamentals of traffic by applying

these rules:

(1) Obtain a copy of the freight classifications applying to your shipments and use it. Check with your local carrier to determine which classification you need and where you can get it.

(2) Check the classification to determine if density is involved in determining the rating. If it is, be sure your supplier specifies density on

his shipments to you.

(3) Whenever a "released value" or "actual value" provision will apply on a commodity you receive (this information will be found in the classification) make sure that your supplier uses these provisions.

(4) Insist that your supplier describe his goods in accordance with the classification description.

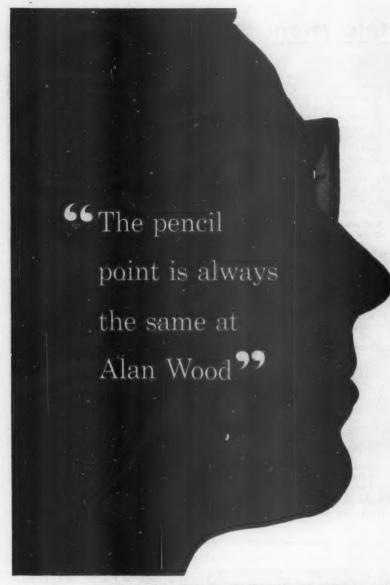
(5) Never permit incoming merchandise to be described by trade name, no matter how well know the trade names are.

(6) Whenever more than one item is shipped on a bill of lading, see that a weight breakdown

is furnished for each item.

Transportation expense is one of the last remaining frontiers available for major cost reductions. By eliminating excess freight charges, you can save thousands of dollars for your company each year. ► END

For a Complete Report on the 45th Annual N.A.P.A. Convention Don't miss the June 20th Issue of PURCHASING Magazine.



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Experience: Seven years experience in various phases of procurement, including: value analysis, buying systems and procedures, staff supervisory experience. Buyer for all electrical components of major automotive manufacturers products. Desire position as senior buyer, purchasing agent or procurement staff mgr.

Education: B.S. marketing, Corporate college graduate training program (2 yrs.)

Will relocate. Write: Box 178

Experience: Four years diversified experience in production materials, i.e. metals, plastics, gears, belting, castings, plumbing supplies, & bldg. mtls. Previous experience includes time as production manager, inventory control supervisor, & cost administrator.

Education: B.A. economics/ M.B.A. industrial management—courses in materials handling, product design, & quality control.

Will relocate. but prefer New York City, L.I.C. or New Jersey. Write: Box 164 Experience: Ten years in purchasing field. Present position purchasing agent. Experience varied. Purchasing steel, brass, aluminum, grey iron & brass castings, shell and sand. Extensive subcontracting experience. Responsible for entire functions of purchasing department. Technical background, accounting and inventory control.

Education: 3 years college—bus. adm.

—One year college purchasing, (eves.)

—I.B.M. (basic machine operations & wiring—programming—industrial engineering (eves.) cost accounting.

Will relocate. Write: Box 185

Experience: Canadian, senior buyer for a multiplant pulp and paper company, qualified with ten years experience. Instigated and promoted coding and cataloguing some twenty-three thousand inventory items. Wide and varied experience in standardization, traveling requisitions, value analysis and inventory control.

Education: McMaster University, bus. adm. and purchasing agents course sponsored by the University of Toronto and the Purchasing Agents Association of Canada.

Prefer: Pacific Coast area Write: Box 186

HOW TO APPLY

Listings in this department are offered without charge. Both purchasing department personnel interested in changing jobs and employers in search of replacement or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence-whether for forms, or in answer to an employment advertisement, to: Box No, Employment Service Department, Purchasing Magazine, 205 East 42nd Street, New York 17, New York.

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A major manufacturer of consumer products, with many plants throughout the U. S., offers an excellent career opportunity in the headquarters purchasing department-location New York City. The person we seek will have several years experience in buying a wide variety of packaging materials for consumer products, will have some college training, preferably a degree, and other qualifications needed to advance with the company, Send resume to Box 411.

Experience: In small engineering shop—with tools, dies and special machinery. Wide knowledge of coal industry and machinery used in this field.

Education: Special courses in purchasing, material handling & inventory control. Also short course in engineering drawing.

Will relocate. Anywhere U.S.A. or foreign country. Write: Box 182

Experience: Twin Coack Aircraft—two and a half years in purchasing department—material control section (raw material and purchased parts) as a material control clerk. Ordered material necessary for the completion of the many contracts on hand.

Education: 3½ yrs college—accounting

major, mathematics minor.

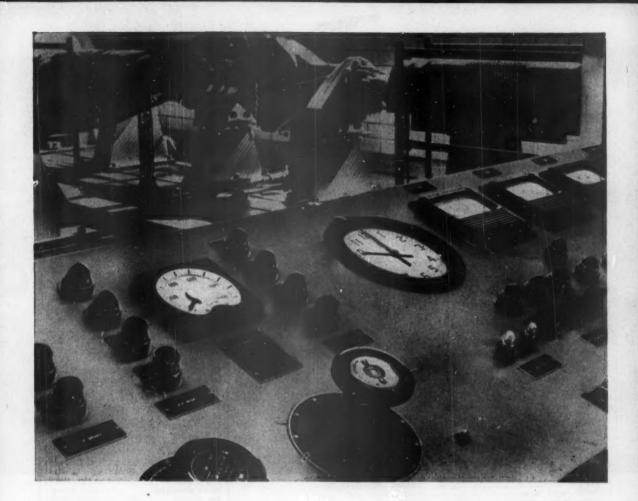
Will relocate.

Write: Box 181

Experience: Twelve years intensive and diversified procurement experience. Presently head of purchasing dept. of medium research and development firm involving complete responsibility for department supervision, buying metals, electronic components, instruments, sub-contracting of fabrication and construction . . . often on behalf of Govt. (AEC)

Education: Bachelor of mechanical engineering. Currently pursuing graduate degree in business administration.

Now residing: Long Island, New York. Write: Box 167



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Anaconda Vibration Eliminator, 11/2" I.D. x 17", installed in liquid fill line of a 9000-gallon liquid oxygen tank installed in a boxcar by Lox Equipment Co.

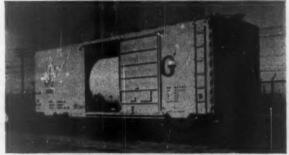
When -297°F LOX hits the piping, standard Anaconda tin bronze flexible connectors absorb the shock

Flexible metal hose connections used to absorb thermal contraction and shock in piping carrying liquefied gases vary widely in size, material and design. Anaconda makes assemblies in stainless steel up to 14 inches I.D. for LOX lines in missile ground handling equipment—and other special connectors and hoses in a variety of metals down to ½ inch I.D.

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FREE TECHNICAL SERVICE. Anaconda Metal Hose specialists are

constantly working with design engineers on flexible connectors and hose to meet new problems. They may recommend a standard unit or help in the design of a special unit. For information on standard units or engineering assistance, write: Anaconda Metal Hose Division, The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.



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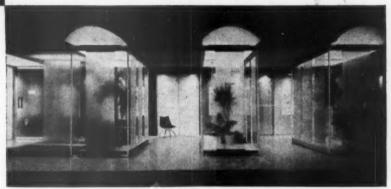
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*Names on request

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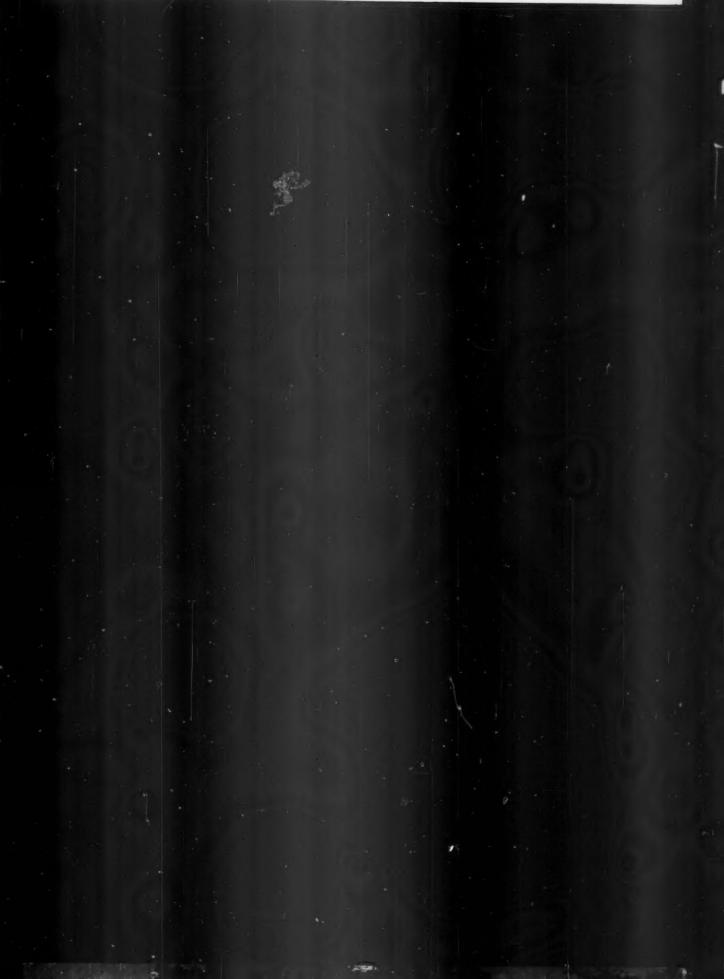
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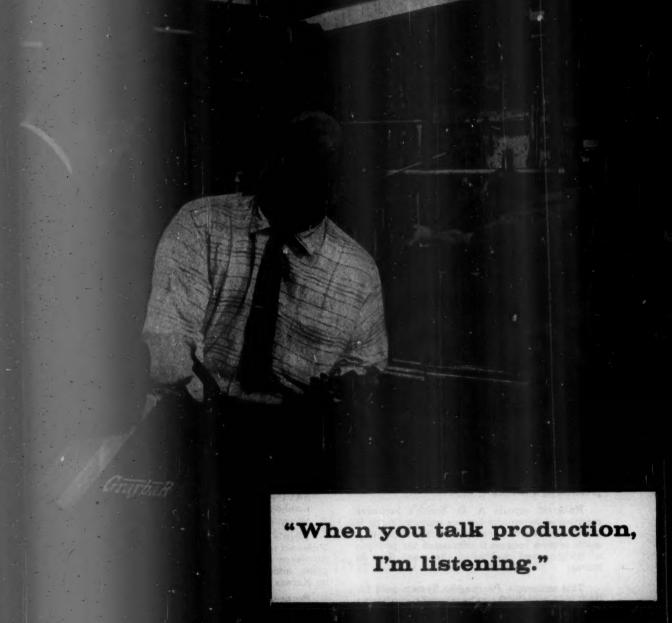


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JUNE 20, 1960 VOLUME 48, No. 13

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